4-Channel
Network Video Recorder

NVR-401

User's Manual

Version 1.0

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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio technician for help.

FCC Caution

To assure continued compliance. (example use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This device complies with Part 15 of the FCC Rules. Operation is subject to the Following two conditions: (1) This device may not cause harmful interference, and (2) this Device must accept any interference received, including interference that may cause undesired operation.

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

WEEE Regulation

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Energy Saving Note of the Device

This power required device does not support Stand by mode operation.
For energy saving, please remove the DC-plug or push the hardware Power Switch to OFF position to disconnect the device from the power circuit.
Without remove the DC-plug or switch off the device, the device will still consuming power from the power circuit.
In the view of Saving the Energy and reduce the unnecessary power consuming, it is strongly suggested to switch off or remove the DC-plug for the device if this device is not intended to be active.

Revision

User's Manual for PLANET 4-ch Network Video Recorder
Model: NVR-401
Rev: 1.0 (March, 2010)
Part No. EM-NVR401

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1. Product Description

The Network Video Recorder is designed for use within a surveillance system, and performs recordings and playbacks pictures from network cameras in the system. It is a recording device using a hard disk drive to record camera pictures instead of using video tapes so that pictures recorded by repeated overwriting will not experience deterioration of the recorded picture quality. Up to 4 cameras can be connected via a network and it is possible to record their camera pictures. It is possible to perform the settings or operate the NVR using a web browser installed on a PC connected to a network, or remote controller. Recorded video can be played back from remote site by a PC. The NVR is compatible with most major brand cameras and its ability to automatically search and find the available cameras on the network can greatly reduce the user effort when expanding the system.

1.1 Product Features

- Simultaneous Record and Live Video Streams
- Manual or Schedule Recording of 4 IP Cameras simultaneously.
- Supports M-JPEG / MPEG-4 / H.264 compression
- Web-Based Easy Configuration
- Video resolution up to HD (1920 * 1080)
- Supports Real Time Clock (RTC)
- Gigabit Ethernet port
- Two-way Audio function
- Video recycle function makes the video keep recording in 7/24
- E-map interface in web
- Smart IP camera search
- Export record video file to AVI format
- Compliant with major brands. Axis, Panasonic, Sony, Planet, Canon and more
- Support mobile phone remote view with WinCE 6.1, Android, Symbian S60, iPhone, Blackberry 4.6
- Multiple Languages support

1.2 System Requirements

The following are minimum system requirements for the system to operate Network Video Recorder (NVR):

Operating System

Windows® XP Professional (32 bit), Windows® Server 2003 (32 bit), Windows Vista or Windows 7

Browser

Microsoft Internet Explorer 7 or above

CPU

Minimum Intel® Core2 Duo E6300 2.8GHz or higher (Core2 Quad is recommended)

RAM

Minimum 1 GB of RAM, 2GB or above is recommended

Network

Minimum 10/100 Ethernet (Gigabit Ethernet is recommended)

Video Graphics Adapter

PCI-Express Standalone, 128MB Ram, minimum 1024x768, 16 bit colors. (256MB is recommended, we highly recommend to work above the 1024 x 768 resolution to get the full experience of the software)

- **Make sure your display DPI setting is set to default at 96DPI**
- **To set DPI value, right-click on desktop, choose "Settings" tab >> "Advanced" >> "General"**

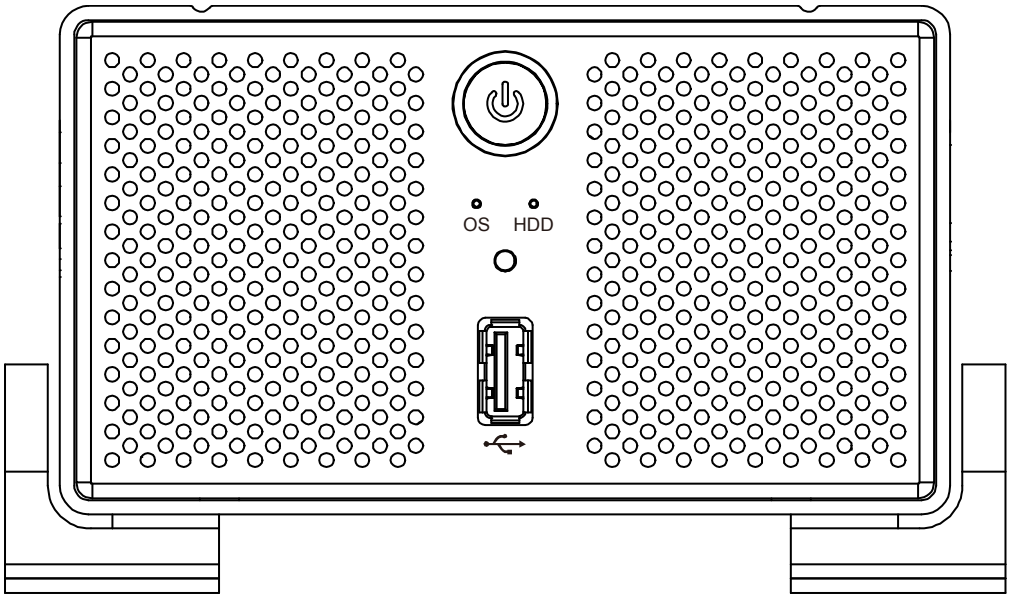
1.3 Packet Content

- 1 x NVR
- 1 x Power Cord
- 1 x RJ-45 Cable
- 1 x CD-ROM
- 1 x Quick Installation Guide
- 8 x HDD Screw

1.4 Specification

Product	NVR-401
General	
OS	Embedded Linux
Ethernet	1 x RJ-45, 10/100/1000 Base-TX
USB Interface	2 x USB2.0 for backup device and firmware upgrade
Storage Device	2 x 3.5” SATA hard disk
Button	Power, Reset, Restart, Manual Record
LED Display	1 x Power 1 x OS 1 x HDD 1 x LAN
Video Input	4 channel IP cameras
Recording Mode	Manual, Schedule, Event
E-Map	Web Browser
Network Service	TCP/IP, DHCP, DNS, HTTP, FTP, NTP, SMTP
Network File Protocol	Microsoft Networks (CIFS/SMB), Internet (HTTP), FTP
Management	Web-based administration Network Time Protocol Multiple users account E-mail notification System log Firmware upgrade
User Interface	Web browser
Multiple Language	English, Italian, Japanese, Portuguese, Spanish, Traditional Chinese, Simplified Chinese
Power	DC12/5V, 3/4.2A
Operating Temperature	0~45 Degree C
Storage Temperature	-40~70 Degree C
Humidity	0~90% (non-condition)
Weight	1.2 kg
Dimension (L x W x H)	244 x 139 x 82mm

1.5 Front Panel



1.6 LEDs Definition

LEDs	Color	Description
Power	Blue	On: Power on. Off: Power off.
OS	Green	Blinking: System activity. Off: System no activity.
HDD	Green	Blinking: HDD is accessing. Off: HDD is no action.

1.7 Buttons

Button	Description
Manual Record	Press to start/stop record manualy.
Power	Press to start or shut down.

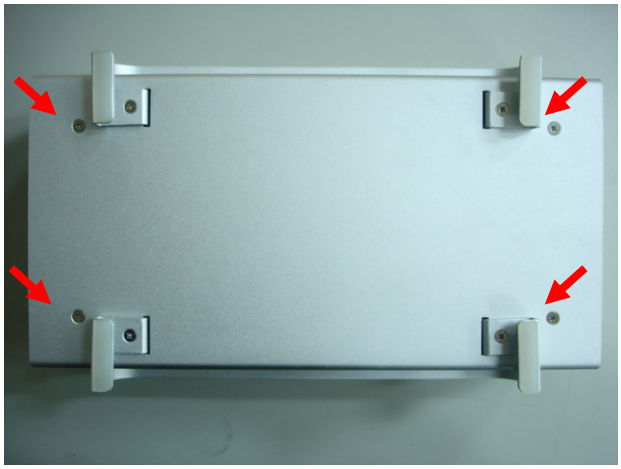
1.8 Connectors

Connector	Description
USB	Connect your USB flash disk for firmware upgrade.
LAN	Connect to your network hub/switch.

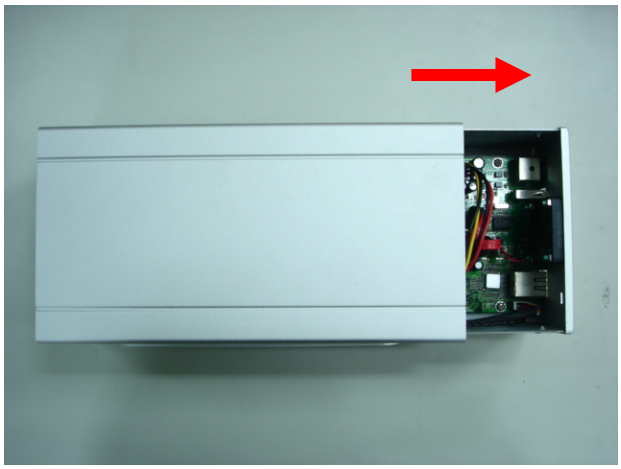
.

2. Install Hard Disk

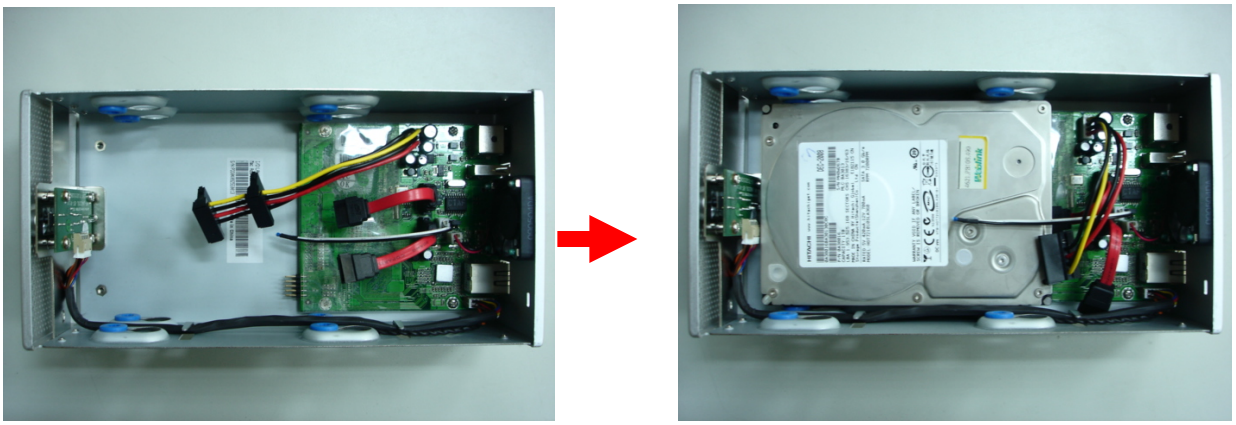
1. Remove the screws on the bottom.



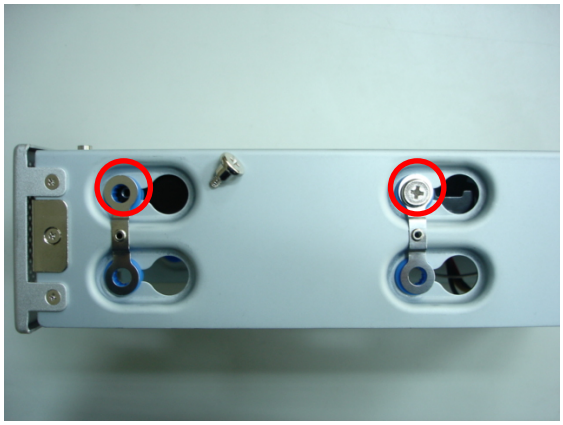
2. Pull out the case inside.

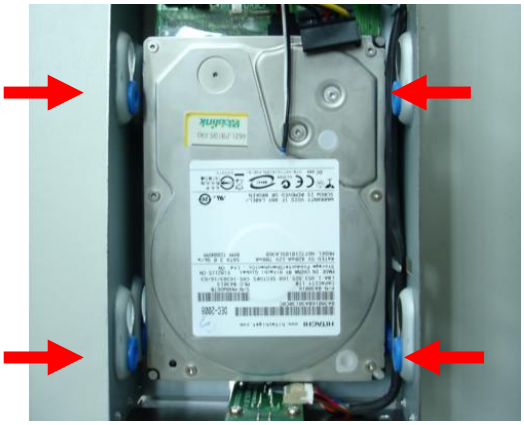


3. Connect the SATA bus cable and power cable to the HDD.



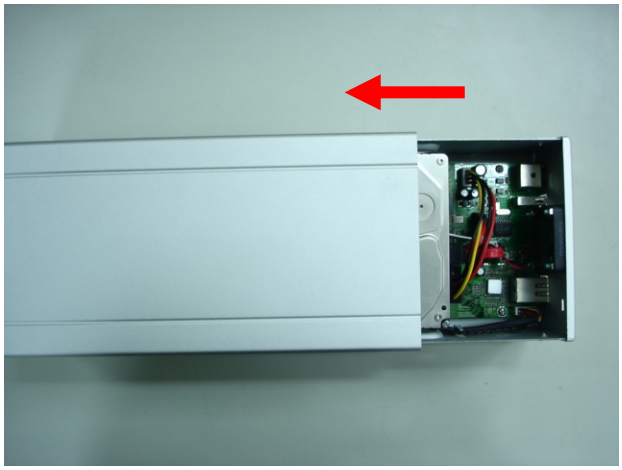
4. Lock the HDD with bundled HDD screws on both sides.





5. If there is a second HDD, please repeat step 3 and 4.

6. Place the inside housing back and secure it with the screws in step 1.



7. Connect the bundled power adapter to the power connector on the rear panel.

8. Press the power button to power on.

3. Connect to the NVR

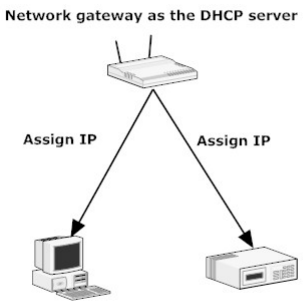
There are various ways you can connect to the NVR and below are the suggested methods for different network setup:

. The NVR is placed in a network with a DHCP server: Connect to the NVR by using **"Device Search"** Utility.
. The NVR is placed in a network without DHCP server (or you are connecting to it directly): **Access NVR with its default IP (192.168.0.20).**

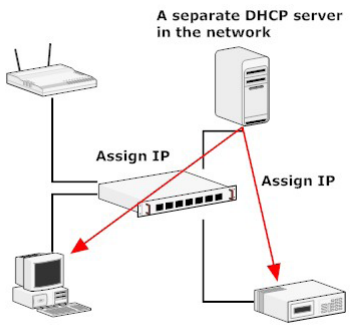
3.1 Use Device Search Utility

If the NVR is placed in a corporate network or a local area network where a DHCP server is already presented, please install the "Device Search" utility from the bundled CD disk.

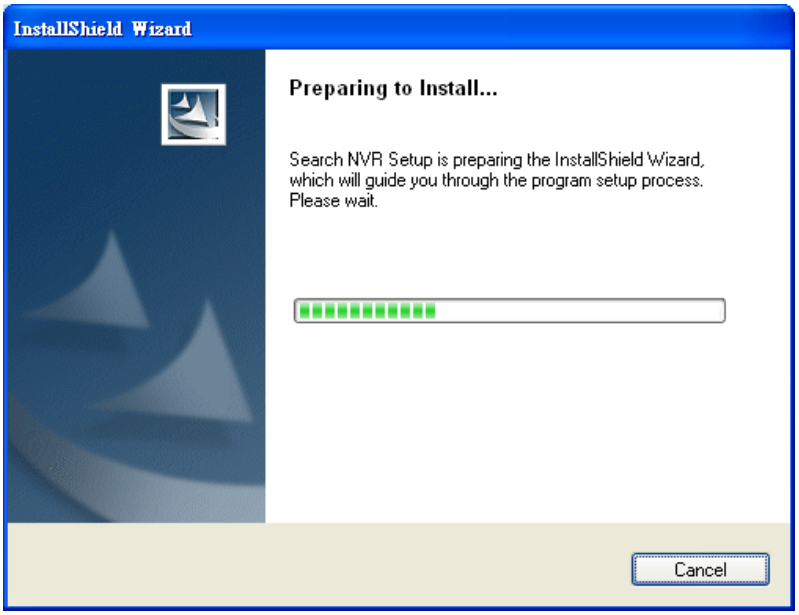
1.



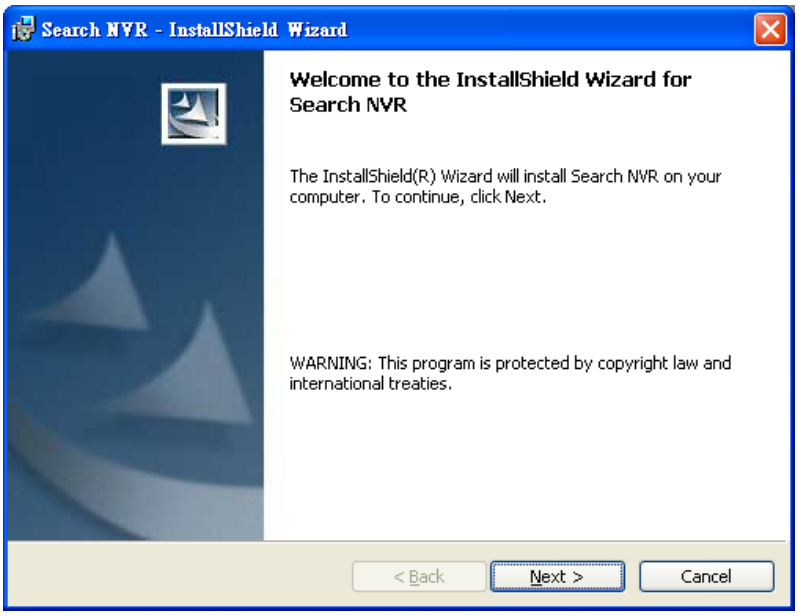
2.



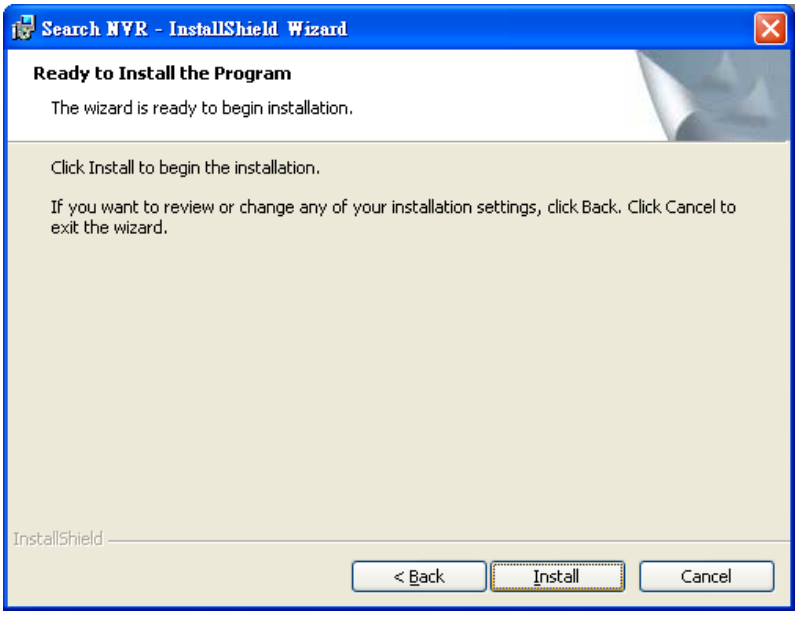
To begin, launch the "Device Search" utility from the CD and proceed with the installation.


InstallShield Wizard
Preparing to Install...
Search NVR Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
Cancel

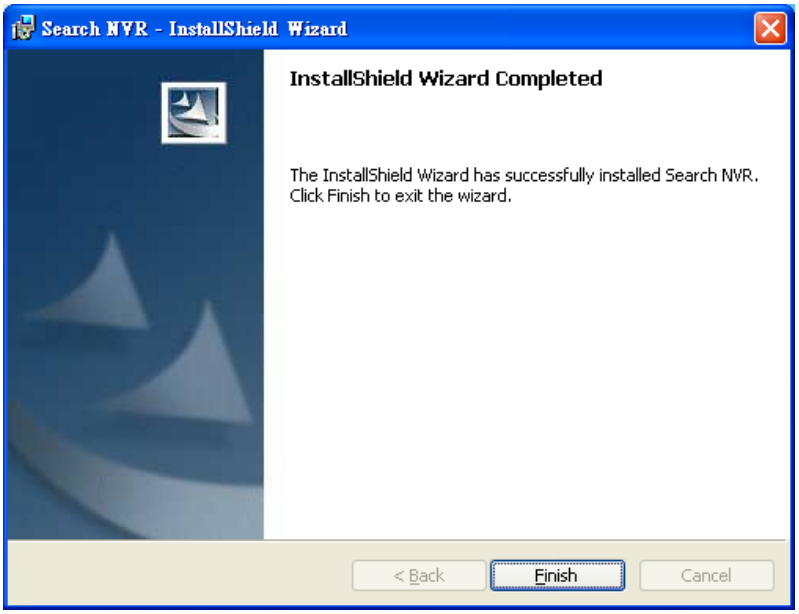
Please click “Next” to continue.


Search NVR - InstallShield Wizard
Welcome to the InstallShield Wizard for Search NVR
The InstallShield(R) Wizard will install Search NVR on your computer. To continue, click Next.
WARNING: This program is protected by copyright law and international treaties.
< Back
Next >
Cancel

Please click “Install” to start the installation.

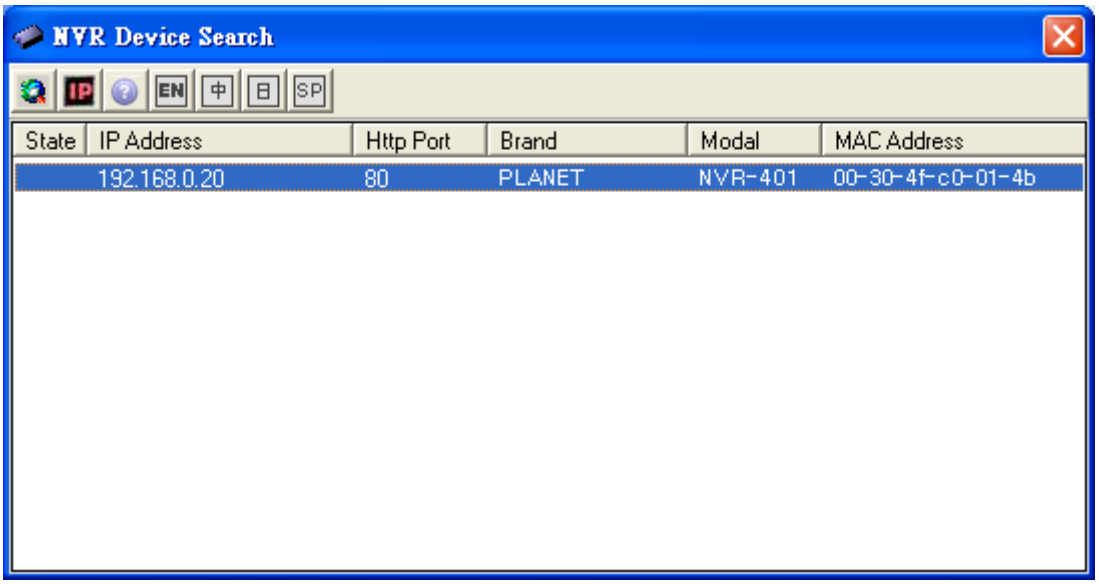

Search NVR - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

Once the installation is complete, please check the “Finish”.


Search NVR - InstallShield Wizard
InstallShield Wizard Completed
The InstallShield Wizard has successfully installed Search NVR. Click Finish to exit the wizard.
< Back
Finish
Cancel

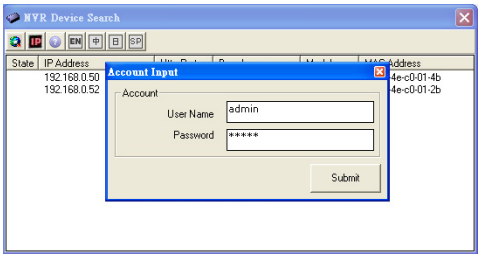
Please go to Start => Programs => NVR => Search NVR to run the search tool. Then you will see the utility start search the network.

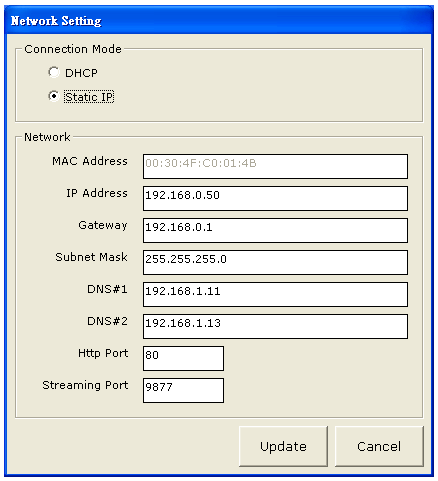
The NVR should be located and its IP address should be displayed: Double-click on it and the program should automatically access the NVR’s web .administration page from your default browser.



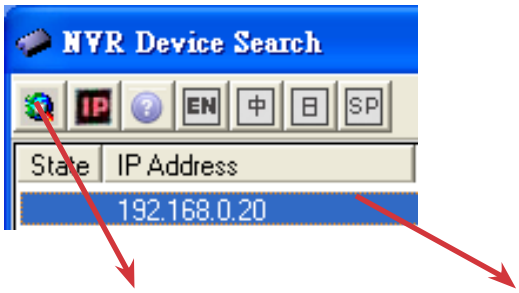
You may change NVR's IP address by click on the button highlighted below.

You will be prompted for the NVR's login information before proceeding to change device's IP address.





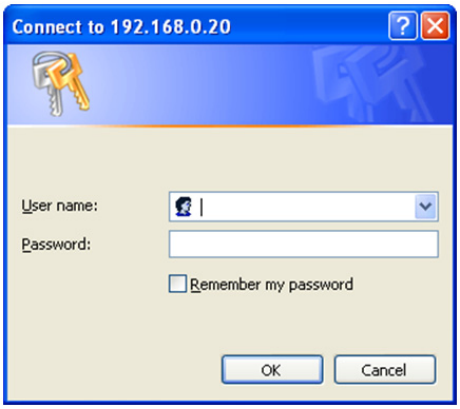
You may click on the button highlighted below to perform search again. Or double-click on any of the search results to access NVR's web administration page.



Perform search again

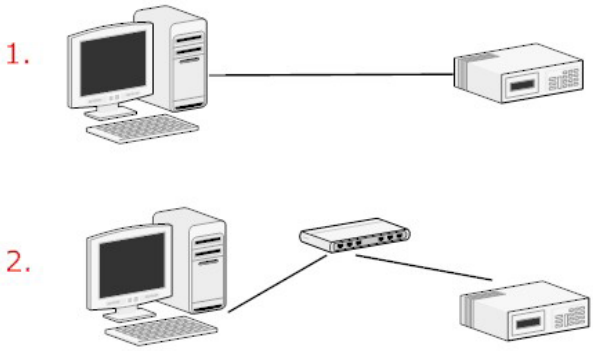
Access NVR's web administration page

You should be prompted for the NVR's username and password. Enter its default username "**admin**" and password "**admin**" and then click "OK" to enter the system.

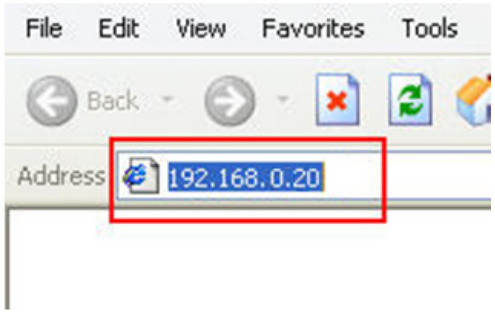


3.2 Access NVR with its default IP address

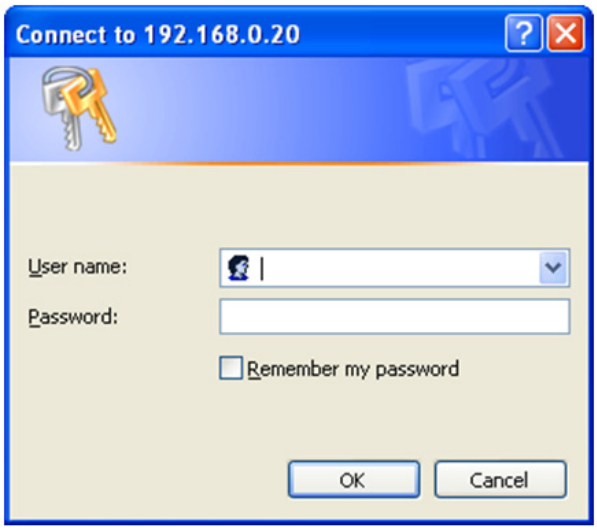
The NVR comes with a pre-configured static IP address "**192.168.0.20**". However, it is only used when there is no DHCP server presented in the network. Connect the NVR and PC to your switch or hub, or connect the PC directly to the NVR using a crossover CAT.5 Ethernet cable.



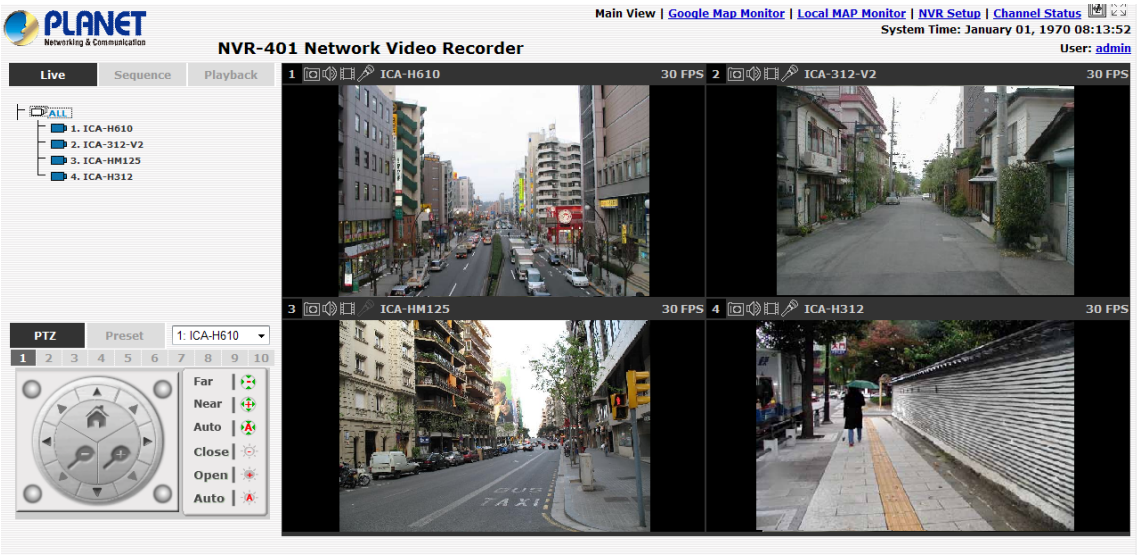
The PC that is connected directly to the NVR (or within the same local area network) should receive an IP from it. Simply access the NVR from your web browser with NVR default IP address.



You should be prompted for the user name and password. Enter its default username "**admin**" and password "**admin**" and then click" OK" to enter the system.



4. Live View

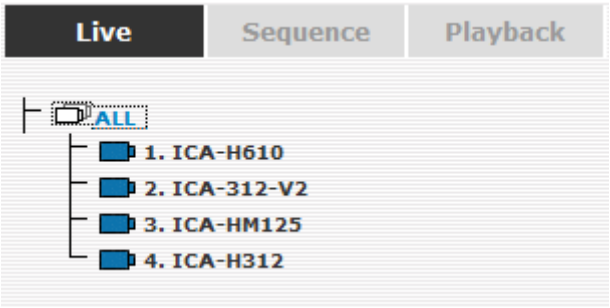


The NVR-401 comes with a 4-video split window view with one video displays on a larger window. Select a channel from the drop-down menu to display its video on the larger split window. You can also double-click on any of the smaller one to display its video to the larger window.

The "Live View" page provides the following functions:

- Retrieve camera's video stream
- Retrieve camera's status
- Perform Live Sequence Viewing
- PTZ Control
- Perform PTZ Preset Sequence viewing
- Perform manual recording
- Take snapshot
- Receive audio of a video stream
- Send audio
- Control "Buzzer"
- Change web UI display language

4.1 Retrieve camera's video stream



The camera list is expanded and displayed on the Live View page.

- Click "All" to display videos in the 4-video mode.
- Click on any camera to display video in single-view mode.

4.2 Retrieve camera's status

The camera list can show each camera's current status. Each status is represented with different colors and their meanings are explained on the left.

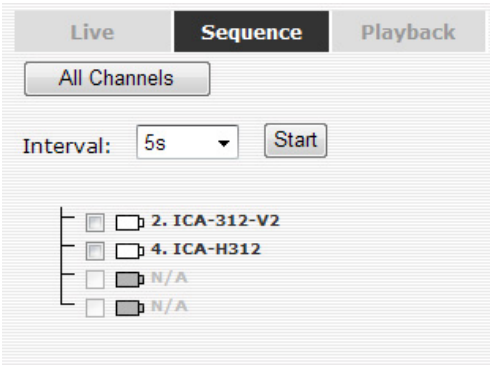
Camera is connected

Camera is NOT connected

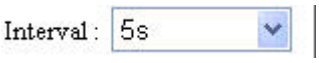
Camera is current performing recording

4.3 Perform Sequence Viewing

Sequence view is a function that allows you to view multiple video streams from certain cameras in sequence automatically with having to select them one by one.
To perform sequence view, select "Sequence" from the upper-left hand corner. Then select one or more camera(s) or camera group(s) for sequence viewing



Then select dwell interval from the drop-down menu



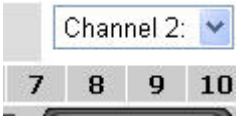
Finally click "Start" to start sequence viewing

Or simply select the desired channels and press "Start" to start sequence view.

4.4 PTZ Control

PTZ control provides functions to pan, tilt, zoom a PTZ camera as well as the ability to adjust camera focus and iris.

Camera(s) that are currently being selected for live viewing will be listed in the PTZ drop-down menu. Simply select a camera then use the PTZ control panel to control the camera.

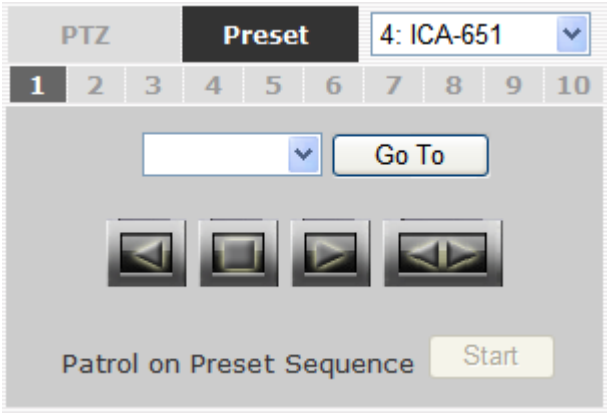


The bar shown below allows you to control the pan/tilt speed.

4.5 Perform PTZ Preset Viewing

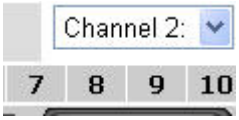
There are three functions provided in the “Preset” section:

. Perform preset point viewing of a particular camera.
. Auto pan a particular camera.
. Perform preset point sequence viewing.

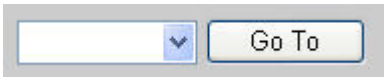


Preset Point Viewing

Start by selecting a PTZ camera from the drop-down list:



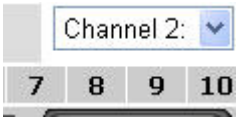
Its available PTZ preset points will be listed in the drop-down list shown below:



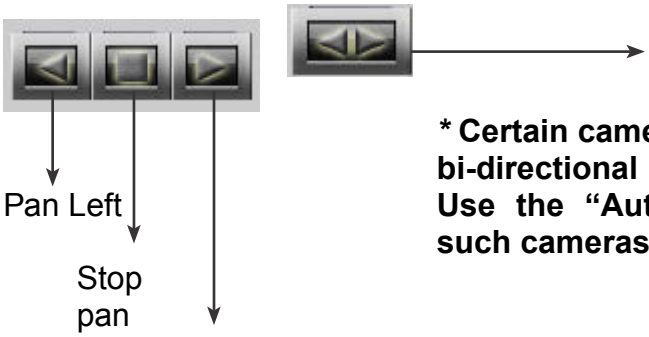
Select a preset position from the drop-down list and click “Go to” to move the live view to that position.

Auto Pan Viewing

Start by selecting a PTZ camera from the drop-down list:



Use the Auto-Pan control buttons to pan right, left and stop auto pan.



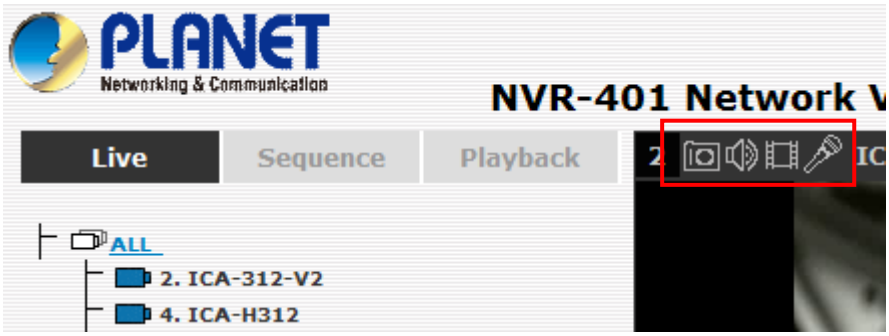
*** Certain cameras do not support bi-directional pan movements. Use the "Auto-Pan" button for such cameras.**

Preset Point Sequence Viewing

This function allows you to view multiple preset points videos of a camera without having to select them one by one. Once you have defined the prefer preset points in "**Camera Configuration**" => "**PTZ Preset Sequence**" under the "**Setup**" menu, click "Start" here and the recorder will begin to display videos from those preset points in sequence automatically until you click "Stop".

4.6 Live Video Control Buttons

Each live video window comes with control buttons with functions described below:



Take a snapshot of a live video.

Turn on/off audio of a live video.

Start/stop recording of a live video (manual recording).

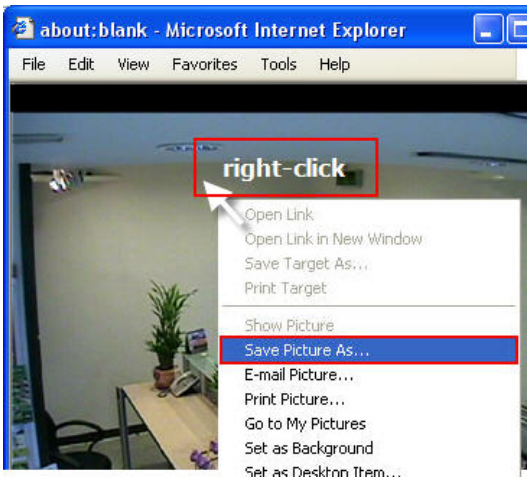
Audio post function.

Full screen view of a live video

Display video in its original ratio

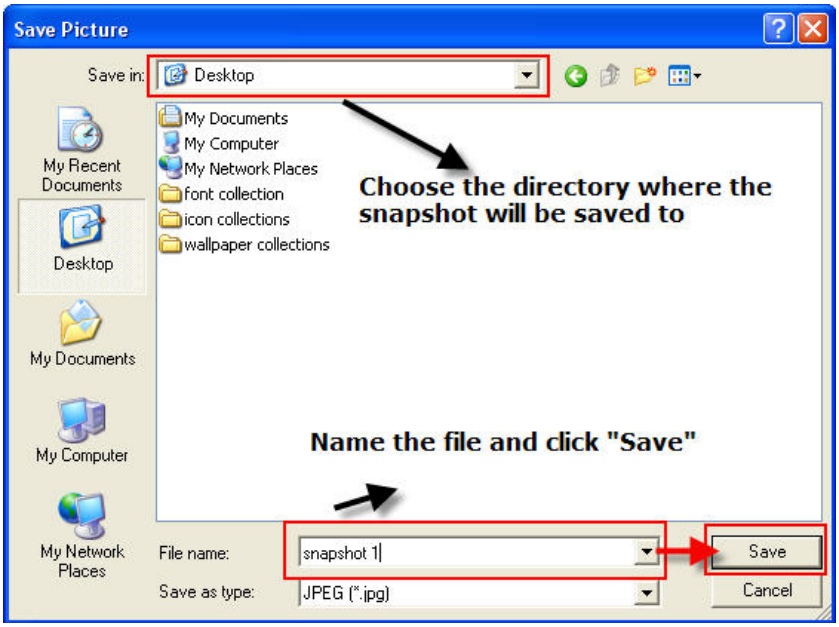
Take a snapshot of a live video

To take a snapshot of a live video, click the button and the snapshot of the video will be displayed in a pop up window shown like below.



Right-click anywhere on the image and select “Save Image as” from the pull-down menu.

In the pop up dialog, name the image file and choose which directory the image will be saved to and click “Save”.



Full Screen View of a Live Video

To view a video in full screen, click the button. To exit full screen video, double-click anywhere on the video.

Turn On/Off Audio of a Live Video

You can retrieve audio from a particular camera. Simply click the button to do so.

The button will show in different color once the audio is turned on. Click on it again to turn off audio.

You may only turn on audio once channel at a time

Start/Stop Recording of a Live Video

You can manually start or stop recording of a live video by using the button.

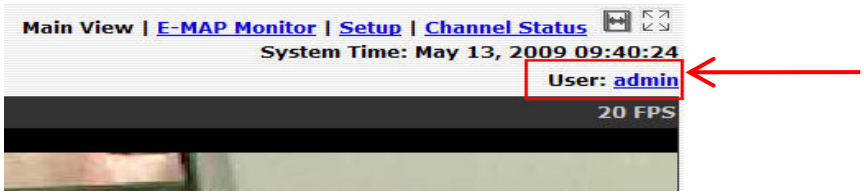
The button will show in different color once the recording is started manually. Click on it again to stop recording.

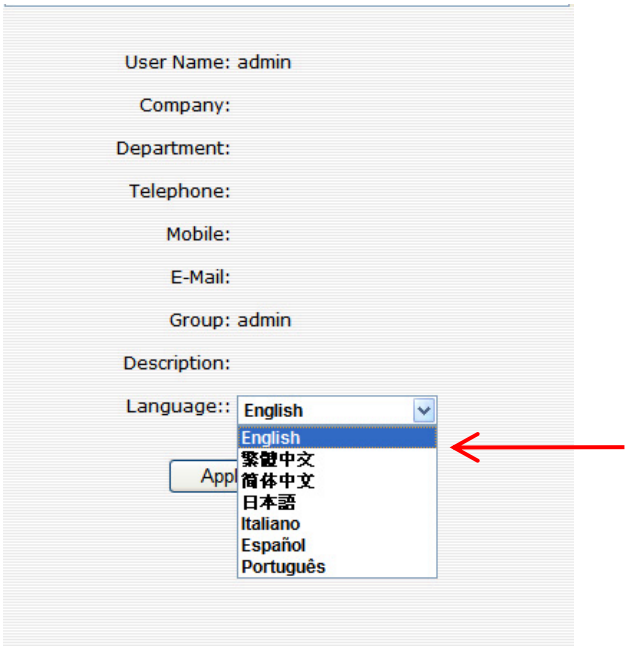
Audio post

This function allows user to speak from a PC through a microphone and the audio can be played at the camera side if it has a speaker connected to it.

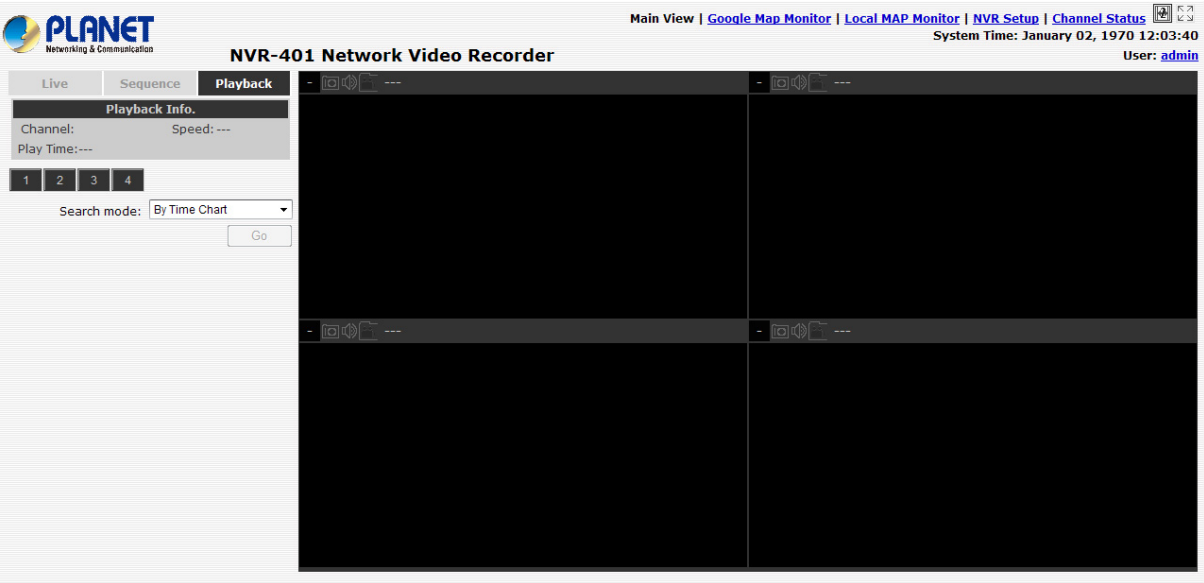
4.7 Change Web UI Display Language

You can change the web UI display language from the current login username link located at the upper-right hand corner. Click on the link opens up a new window which displays detail information about the user as well as a drop-down menu which lets you change the display language.





5. Playback



Playback is a function that allows you to play one or more videos that were previously recorded by a chosen recording method or due to an event trigger. The NVR offers synchronized playback from up to 4 channels and various types of search methods are provided to help you find the footage you need quickly.

You can turn on or off the audio of a recorded video at your choice if audio was also recorded during the recording of the video.

Playback video can be viewed in full screen and snapshots can be taken and saved during a video playback.

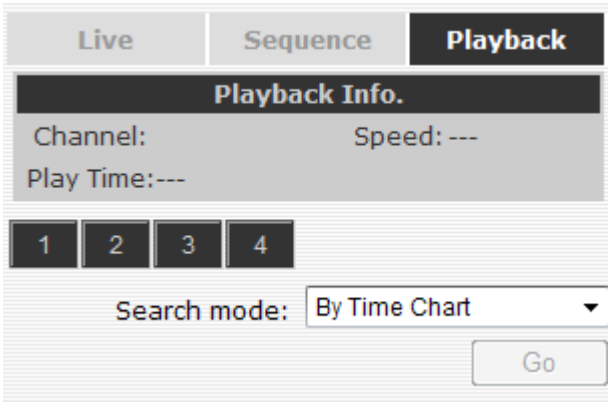
5.1 Methods to Search Playback Videos

The NVR offers three methods to quickly help users find videos that were previously recorded:

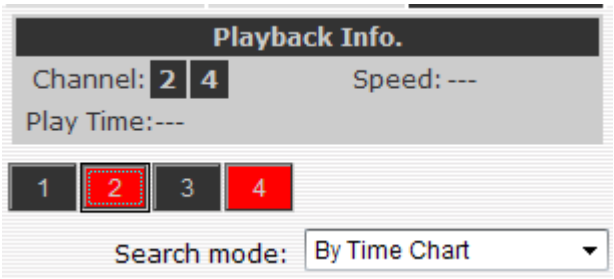
- Search by time: Specify a time range and search videos recorded within that range.
- Search by event: Find videos that were recorded due to event triggers.
- Play by start time: Enter a specific time a video was recorded to start playing back the video.

Search by time chart

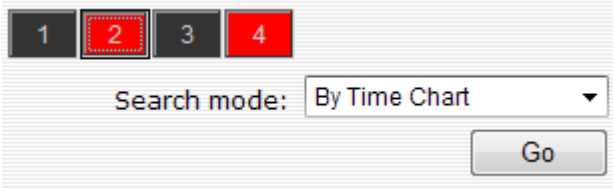
. Start by selecting which channel(s) you would like to perform a search on:



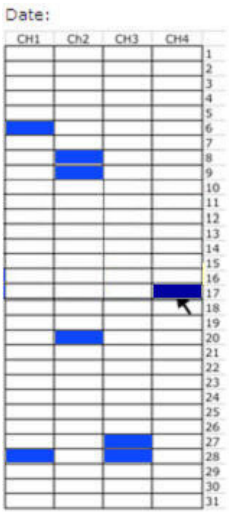
- Selected channels will be marked in red



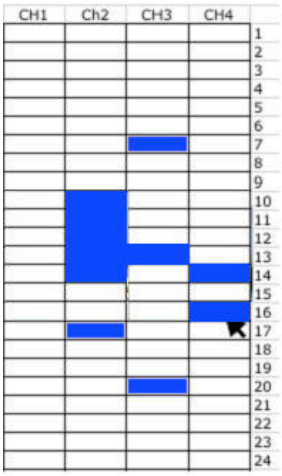
. Select “Search by time chart” from the “Search Method” drop- down list and click “Go” to start the search:



. Results will then be displayed in a “Date/Channel” table and boxes marked in blue represent videos found in those dates:



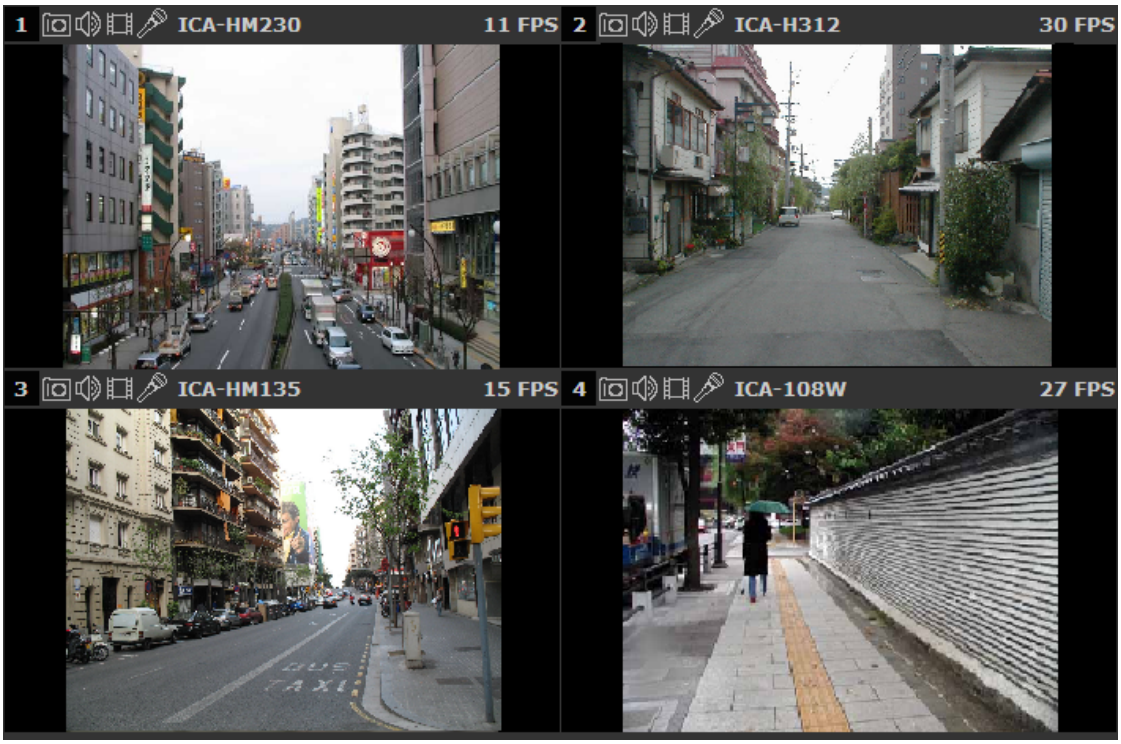
. Click on any blue cell box should direct you to the hour/channel table if there were multiple videos recorded during that date:



* Videos from other cameras that are recorded on the same date will also be displayed.

* Move the mouse cursor on a particular cell box without clicking gives you a preview of the playback video n a small thumbnail.

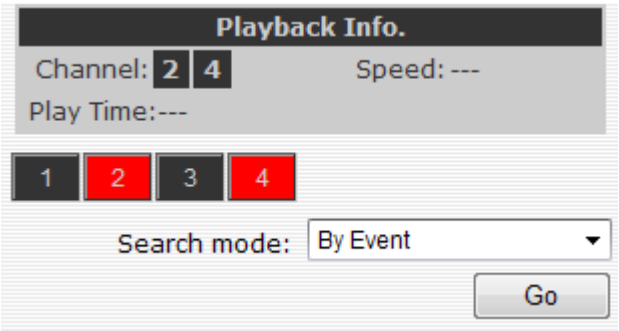
. Click on the cell box again will start playing back the videos if you have reached the end of search results:



. Videos found from other cameras that were recorded at the same time will also be played.

Search by event

. Start by selecting which channel(s) you would like to perform a search on.



Selected channels will be marked in red.

. Select “Search by event” from the “Search Method” drop-down list and click “Go” to start the search.

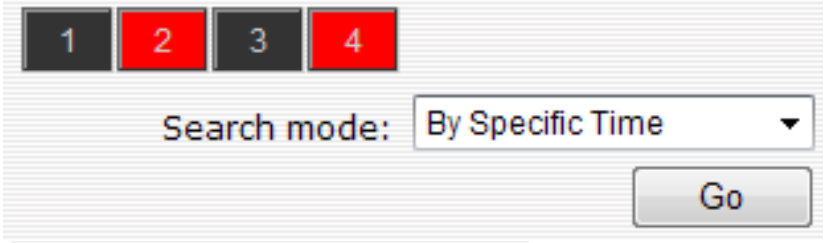
. Results will then be listed like what is shown below (displays the oldest record top down). Click on a particular result to start the playback.

* You can click “Next Search” to display the next 15 results.

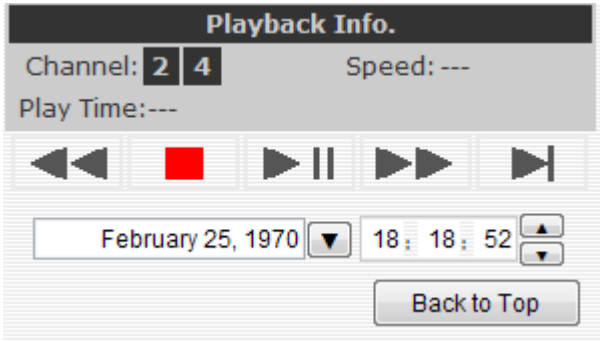
. You may also specify a new start time to search and display results from then on. You can restrict the number of results to be displayed at once (max. 30) and perform the search again.

Play by specific time

If you know when a recording was taken place, you may choose the "Play by start time" from the "Search Method" drop-down list.



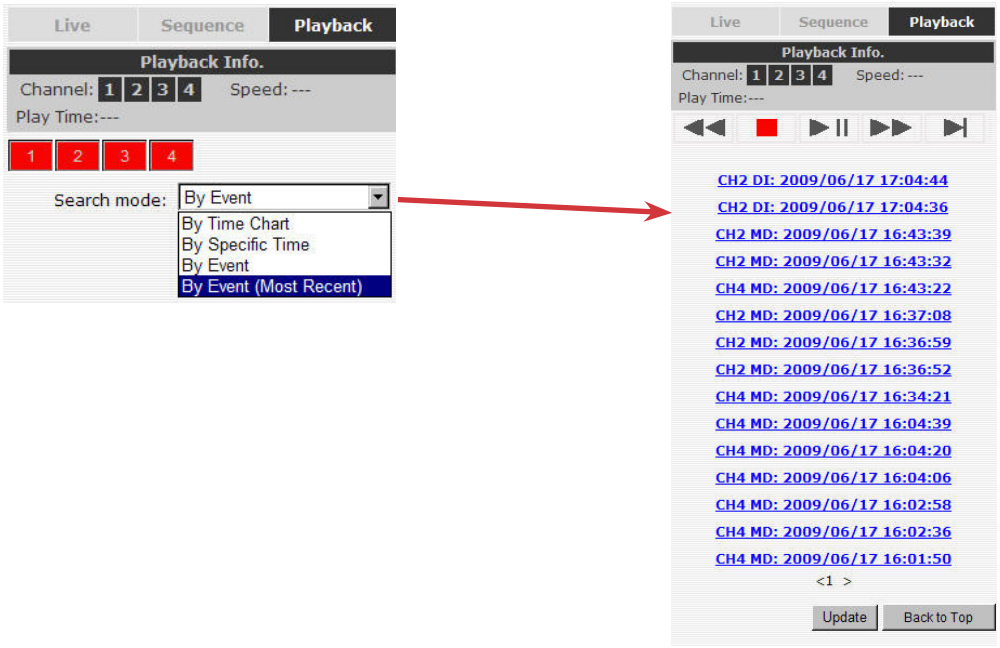
Then you will be prompted to enter a specific time and date for the recorded video.



Use the button to select month, date, and year.

Search by event (Most Recent)

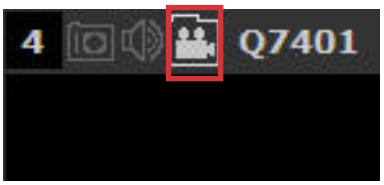
This function quickly displays the most recent event recordings from the selected channels, displaying the most recent result top down. You may click "Update" to update the list to display the most recent result.



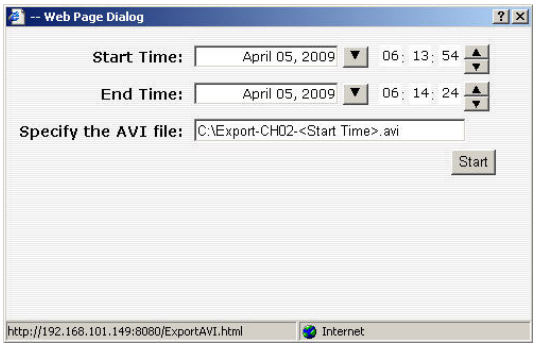
5.2 Export Playback Videos to AVI Files

User can export the recorded playback videos stored on NVR-401 to a local computer and save them in AVI file format. The files can then be played on the PC by a 3rd party media player such as VLC player or Windows Media player.

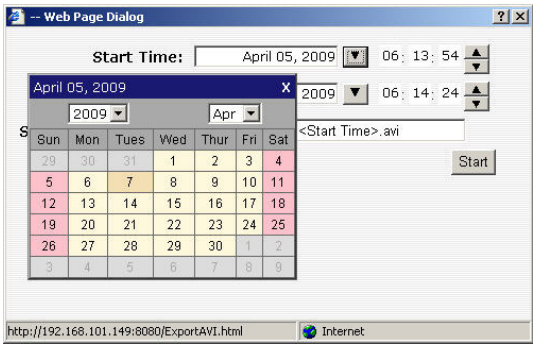
Once you locate the recorded videos with steps described in the previous section, hit the “Export AVI” button on a video window of the video you wish to export.



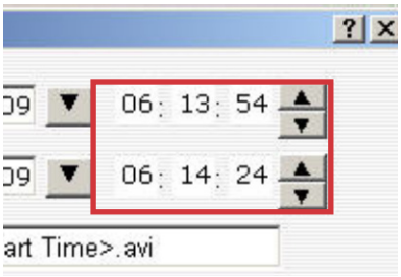
A new dialog will pop up and allows you to specify the time frame (or length) of the video you wish to export.



Click the button to pull down the calendar to help you specify the month, date and the year

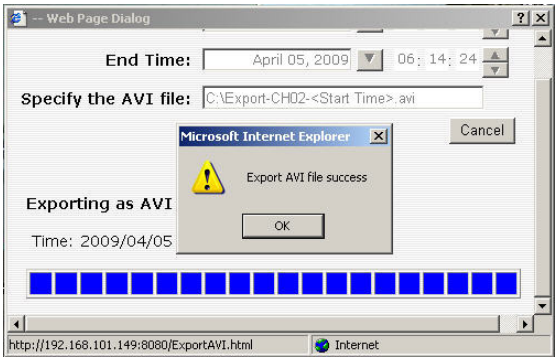


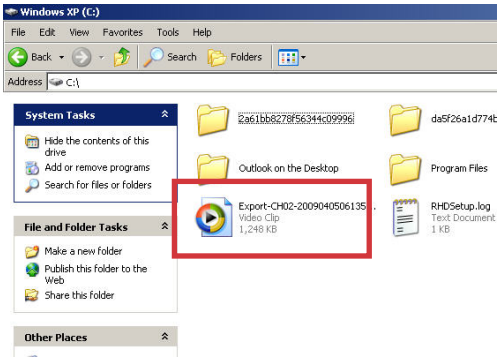
Specify the starting and ending hours of the video by entering numbers in the text boxes.



Hit the “Start” button to start exporting. The file will be automatically named and saved under the C:\ partition.

You will be notified once the process is completed successfully





The exported AVI file will be saved under the C partition.

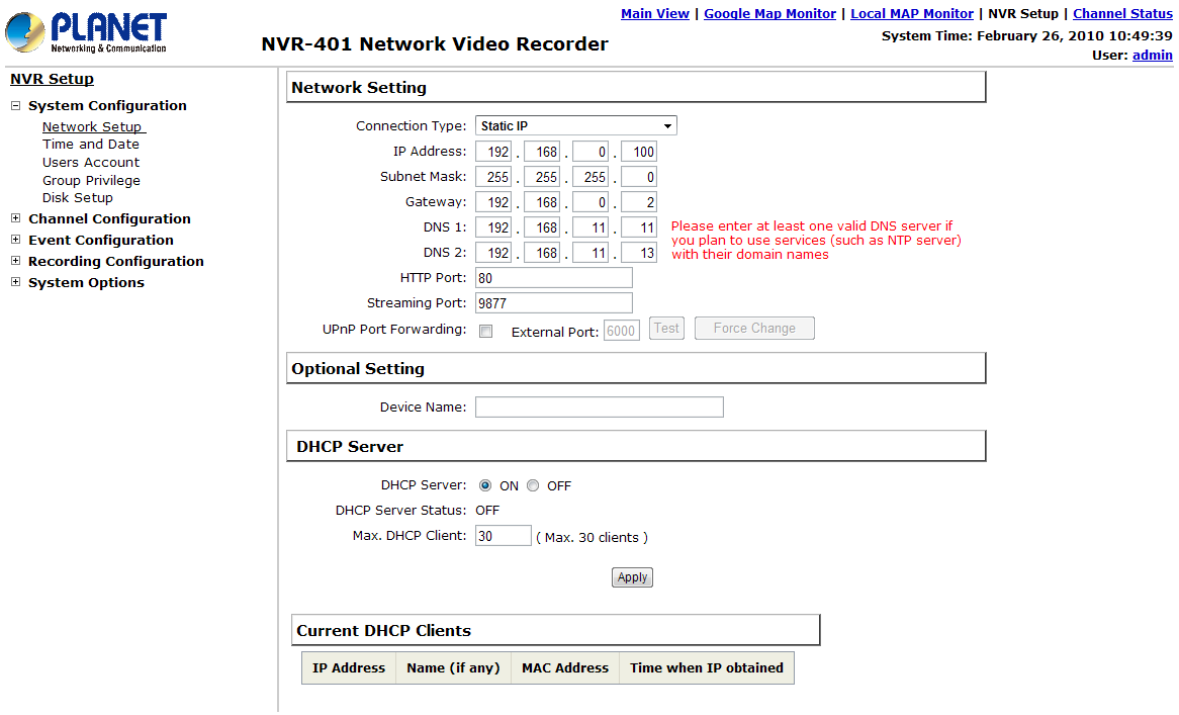
* ffdshow is required in order to play the exported AVI file with Windows Media Player. You can get it at “http://sourceforge.net/projects/ffd-show-tryout!” to download the “ffdshow_beta6_rev2527_20081219.exe”.

6. System Setup

6.1 System Configurations

The “System Configurations” page provides users options to setup the device quickly and properly. After properly configuring all settings in all the sub-pages, users should expect a fully working network video recorder that is ready to manage cameras on the network. We will start by configuring its network settings to make sure it works correctly in your network. Next, we will help you adjust the system time so videos will be recorder with correct timestamp. To better secure the system for unwanted disturbance, we will guide you on setting up user’s account and privileges to prevent settings gets altered by users other than the system administrator. Lastly, we will tell you what you should expect after installing a hard disk and how to prepare the hard disk for the video recording.

6.1.1 Network Settings


Main View | Google Map Monitor | Local MAP Monitor | NVR Setup | Channel Status
NVR-401 Network Video Recorder
System Time: February 26, 2010 10:49:39
User: admin
NVR Setup
System Configuration
Network Setup
Time and Date
Users Account
Group Privilege
Disk Setup
Channel Configuration
Event Configuration
Recording Configuration
System Options
Network Setting
Connection Type: Static IP
IP Address: 192 . 168 . 0 . 100
Subnet Mask: 255 . 255 . 255 . 0
Gateway: 192 . 168 . 0 . 2
DNS 1: 192 . 168 . 11 . 11
DNS 2: 192 . 168 . 11 . 13
Please enter at least one valid DNS server if you plan to use services (such as NTP server) with their domain names
HTTP Port: 80
Streaming Port: 9877
UPnP Port Forwarding: External Port: 6000 Test Force Change
Optional Setting
Device Name:
DHCP Server
DHCP Server: ON OFF
DHCP Server Status: OFF
Max. DHCP Client: 30 (Max. 30 clients)
Apply
Current DHCP Clients
IP Address
Name (if any)
MAC Address
Time when IP obtained

You need to adjust settings in this page for the device to work properly in your network. It is critical that settings here are configured correctly based on your network configurations so that the recorder can be administered through the local area network and cameras can be connected from it.

By default, the recorder is set to obtain IP address from DHCP server, it should be sufficient in most network environments, and most likely you should not need to alter anything in this page. To locate the recorder, simply use the IP Utility with steps described in page 13.

If you wish to set the recorder to use a static IP address in your local area network,

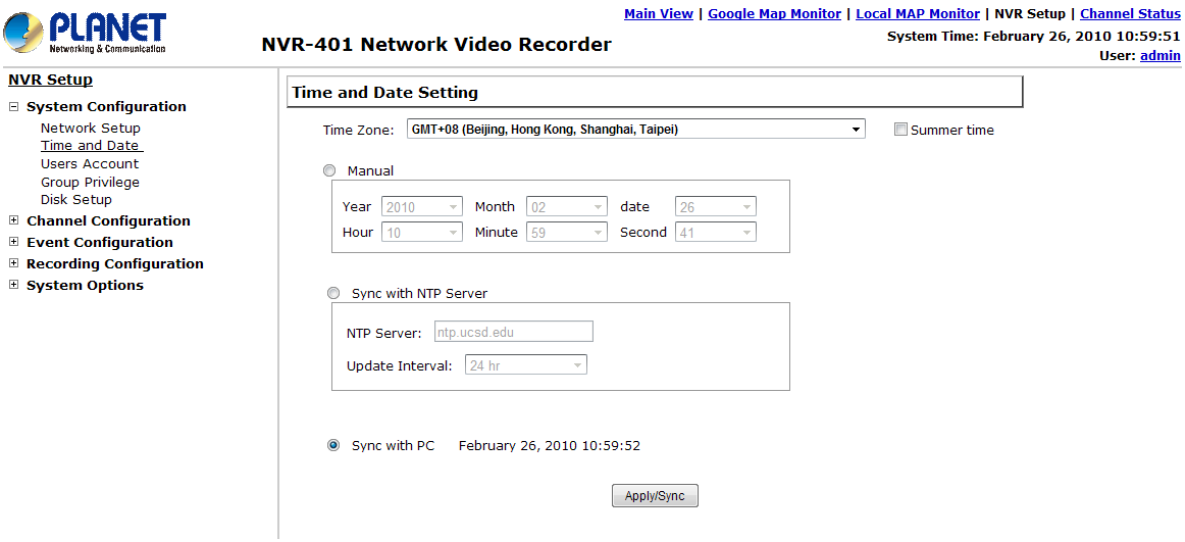
1. Choose “Static IP” from the “Connection Type” drop-down menu
2. Enter the IP address, subnet mask, default gateway address and DNS server address for the recorder

3. Enable “DHCP Server” under “DHCP Server” if you wish to use the recorder as a DHCP server, or leave it disabled if there is already a DHCP server in the network .
4. Click Apply for the settings to take effect.

The recorder can detect the presence of a DHCP server upon startup. It sets itself to use static IP address if there is no DHCP server currently presented in the network. Its DHCP server function is also turned on at the same time to assign IP addresses to cameras that are later connected to the network. You can manually turn off the DHCP server function if you wish to use a separate DHCP server.

Change the recorder’s IP address would require the recorder to restart. Restart the device under “system Options” >> “Maintenance” for the settings to take effect.

6.1.2 Time and Date



Set the time and date by selecting the time zone according to your location. It is imperative that you set the recorder’s time correctly to avoid the following errors:

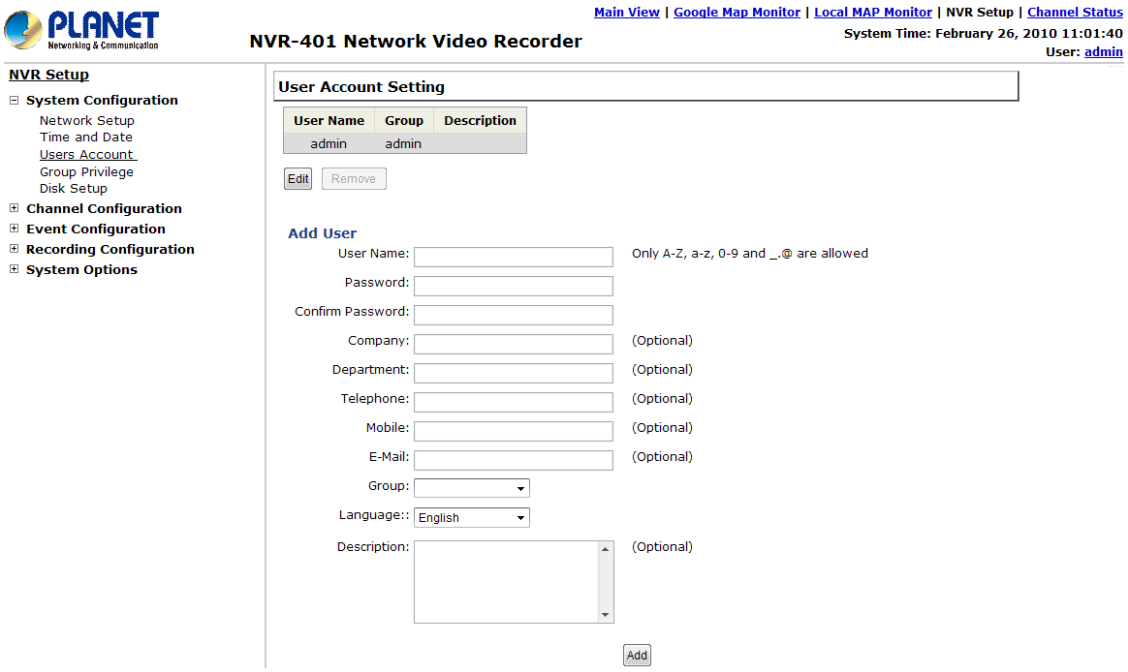
- Incorrect display time for playback videos.
- Inconsistent display time of event logs and when they actually occur.

After selecting the time zone, choose an option below to set the recorder time.

- **Manual** - Use the drop-down list and configure the time manually.
- **Sync with NTP server** - enter the hostname or IP address of a valid NTP server and set how often the recorder should synchronize the time with the recorder by using the “Update interval” drop-down menu.
- **Sync with PC** - Check this option to synchronize the recorder time with the PC that you are currently using to access the recorder.

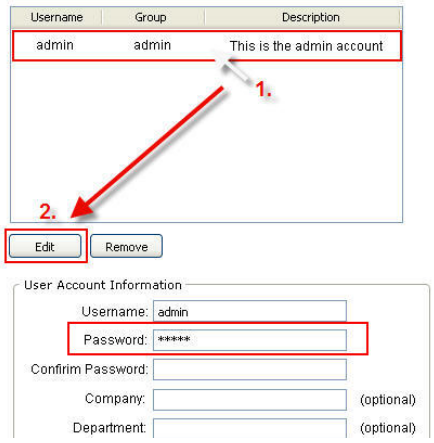
6.1.3 User Account

The recorder can be accessed by multiple users simultaneously. You can add, remove, and edit users by using options provided in this page to keep user information organized. Each recorder comes with a built-in “admin” account with password “admin”. It’s highly recommended to change the password upon your initial login.



To change the password of the “admin” account:

1. Click and highlight the “admin” account in the account list and click “Edit”.
2. Its information should be displayed in “User Account Information”.
3. Enter a new password in the “Password” field and enter it again in “Confirm Password”.

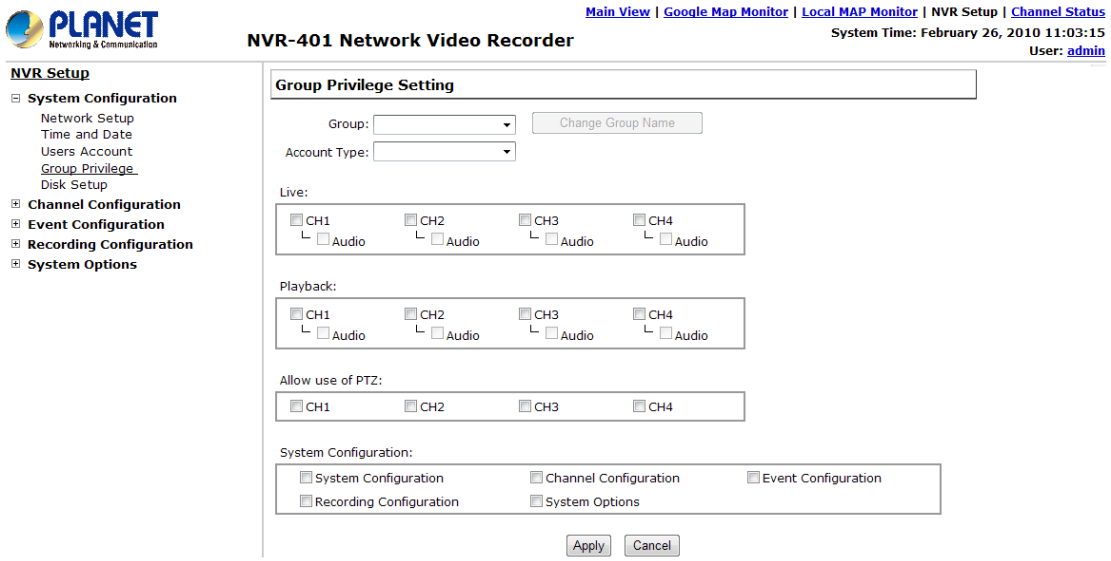


To add a new user:

- Enter a username and password in “User Account Information”. All other fields are optional for your own reference.
- Select a group from the “Group” drop-down menu to assign the new user to a particular group.
- Enter a short description for the account if you wish.
- Click “Apply” to finish configuration.

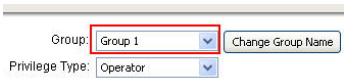
6.1.4 Group Privilege

Group Privilege is where you can create multiple customized access policies for situations if you need the recorder to be accessed by users other than the administrator. You can do so by creating a group, and then remove access privileges for certain configuration pages or cameras. Users that are created and assigned to this group will have limited access instead of full administration rights.

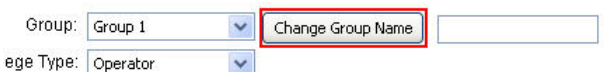


The recorder comes with seven built-in groups and five built-in privilege profiles, except the “admin” and the “guest” accounts; the other five groups are fully customizable or you can simply assign a group with one of the default privilege profiles. You can, however, assign more than one users to the “admin” account if you wish to do so. The guest account comes with a “view-only” privilege in the “Live View” page, and users in this group do not have the power to make any changes in the “Live View” page or have access to pages other than the “Live View” page.

To create a group, select a group from the “Group” drop-down.

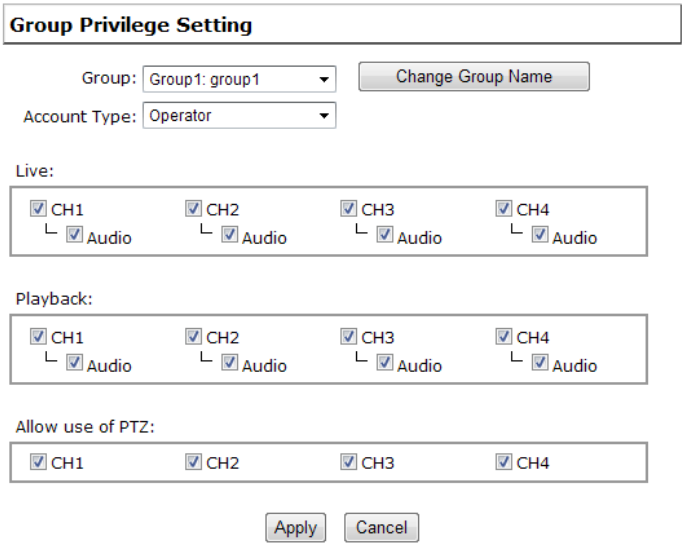


You can change the group name by clicking the “Change Group Name” button. A text box will be displayed for you to enter the new group.



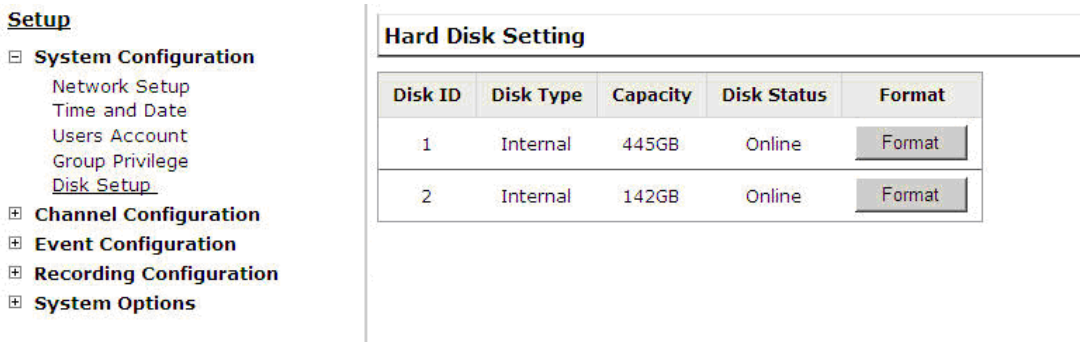
Choose what type of privilege you would like this group to have from the “Privilege Type” drop-down menu.

Its access privilege will then be displayed. You can alter its settings by allowing or denying access to other cameras using the checkboxes instead of accepting the defaults.



6.1.5 Disk Setup

Once you install a hard disk to the recorder, you would need to initialize it so that it can be ready for recording. You can obtain basic information about the disk you installed in this page.
To initialize it, simply click the “Format” button.



You can also connect external USB thumb drive to the recorder for firmware upgrade.

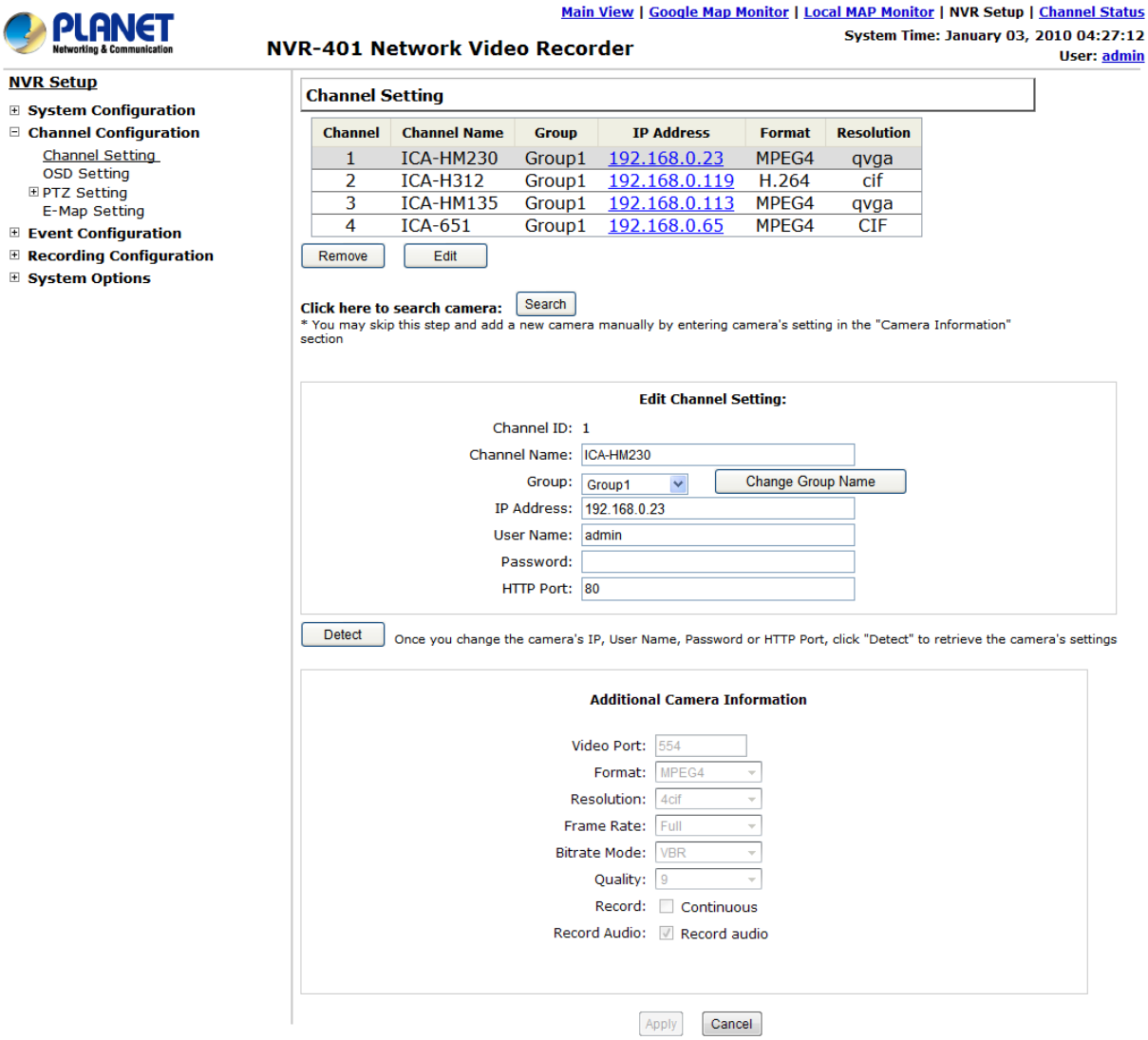
For instructions to install a hard disk to the recorder, refer to page 10.

To obtain detail information about the disk, go to “System Options” >> “Disk Status”.

6.2 Channel Configurations

6.2.1 Add a Camera

The NVR provides two options for adding a new camera. Users have the option to let the recorder automatically find the cameras or it is possible to enter camera's information and add it manually.

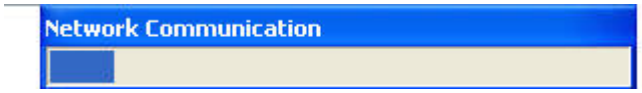

Main View | Google Map Monitor | Local MAP Monitor | NVR Setup | Channel Status
NVR-401 Network Video Recorder
System Time: January 03, 2010 04:27:12
User: admin
NVR Setup
System Configuration
Channel Configuration
Channel Setting
OSD Setting
PTZ Setting
E-Map Setting
Event Configuration
Recording Configuration
System Options
Channel Setting
Channel | Channel Name | Group | IP Address | Format | Resolution
1 | ICA-HM230 | Group1 | 192.168.0.23 | MPEG4 | qvga
2 | ICA-H312 | Group1 | 192.168.0.119 | H.264 | cif
3 | ICA-HM135 | Group1 | 192.168.0.113 | MPEG4 | qvga
4 | ICA-651 | Group1 | 192.168.0.65 | MPEG4 | CIF
Remove
Edit
Click here to search camera:
Search
* You may skip this step and add a new camera manually by entering camera's setting in the "Camera Information" section
Edit Channel Setting:
Channel ID: 1
Channel Name: ICA-HM230
Group: Group1
Change Group Name
IP Address: 192.168.0.23
User Name: admin
Password:
HTTP Port: 80
Detect
Once you change the camera's IP, User Name, Password or HTTP Port, click "Detect" to retrieve the camera's settings
Additional Camera Information
Video Port: 554
Format: MPEG4
Resolution: 4cif
Frame Rate: Full
Bitrate Mode: VBR
Quality: 9
Record: Continuous
Record Audio: Record audio
Apply
Cancel

Automatic Search:

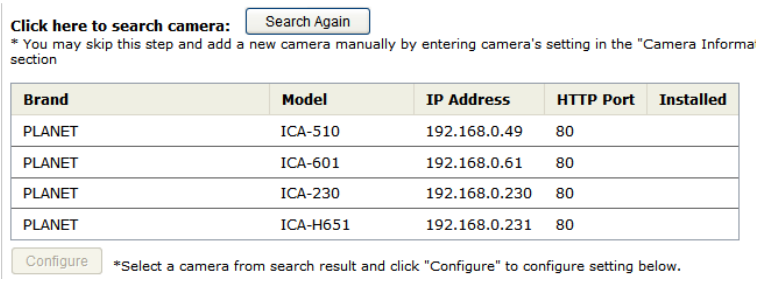
1. Click the "Search" button to perform the camera search. You should be prompted to install Active Control component in order for the search to function properly. Go ahead and click "Install"

Internet Explorer - Security Warning
Do you want to install this software?
Name: ActiveX Control of Devices Search
Publisher: PLANET Technology Corp.
More options
Install
Don't Install
While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

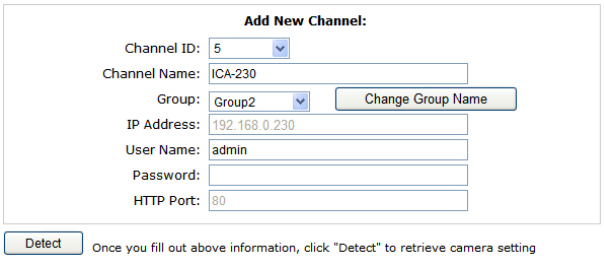
2. After that, the search should begin and its status should be displayed.



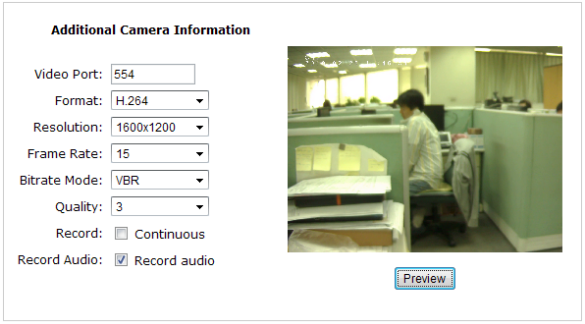
3. Found cameras should be listed and simply select a camera from the list and press “Configure”.



4. It’s corresponding information should be displayed in the “Camera Information” section. Enter its username and password and select the channel ID and name the camera.



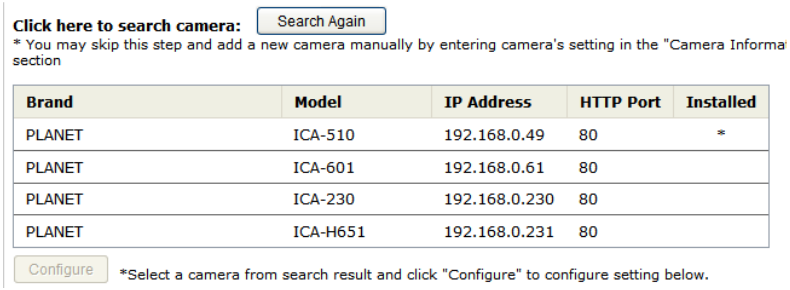
5. Click on “Detect” to establish connection between the recorder and the camera. If connection establishes successfully, camera’s detailed information should be polled and displayed as below.



6. Adjust its video format, frame rate, resolution or bitrate…etc if you wish. You can also click on the “Preview” to preview the live video of the camera.

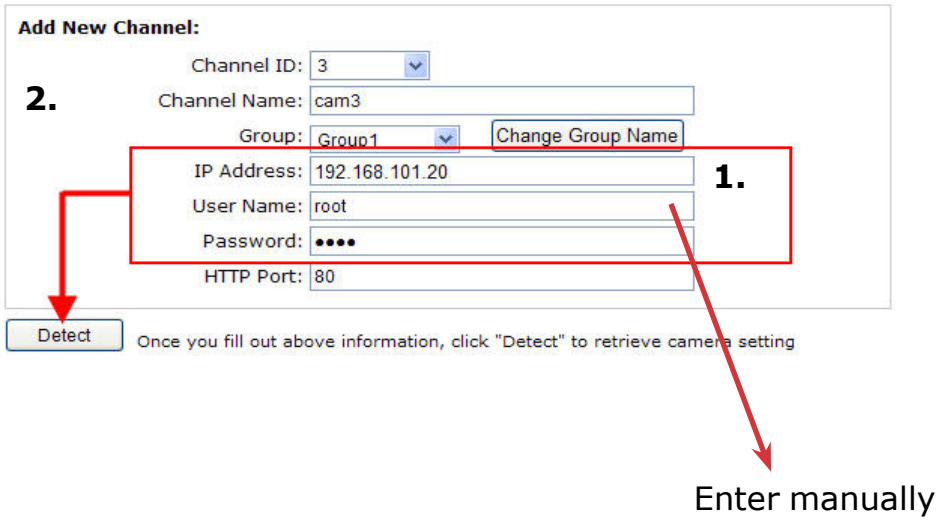
Click “Add” to finish adding the camera.

If cameras are marked with “*” in the search result, it means those cameras are already configured and connected to NVR.



Add a camera manually

Simply follow the instruction described above but instead of using the “Search” function, enter the camera’s IP address and credential in the “Camera Information” manually, then follow step 5 and 6 described above.



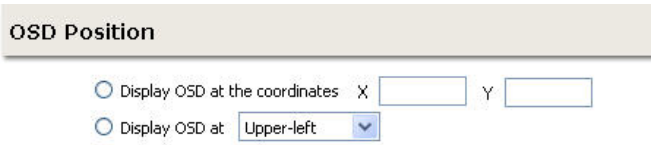
6.2.2 OSD Settings

The OSD (On Screen Display) allows users to add informational text message and embed it onto the video. By default, this function is turned off. To add texts to one or more videos.

1. Select a camera you would like to add text to and choose “Display OSD”.

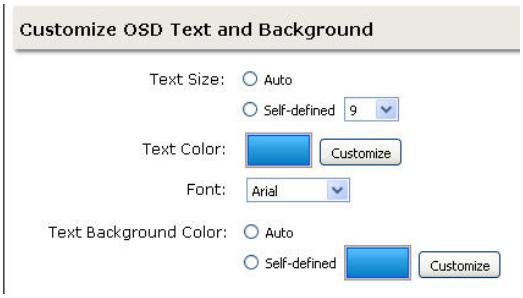
2. Choose one or more display options if you would also like the recorder to automatically embed the system time or the frame rate for you. Or simply choose to display a custom message of your own.

3. Next, define where the text will be displayed by either entering an X/Y coordinate or use the system pre-defined position from the drop-down menu.



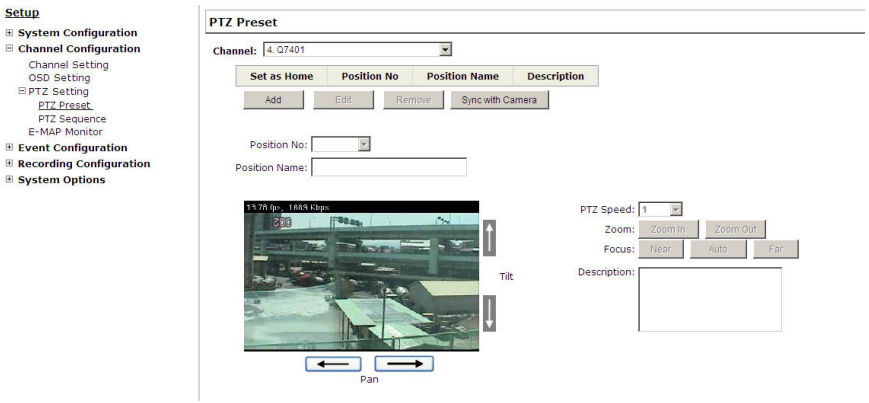
4. Click on the “Preview” button to see the preview of your setting and click “Apply” to save the configuration.

. The texts can be further adjusted with changes to different size, color or font so they can be more visible on the video.



6.2.3 PTZ Preset Settings

The recorder supports PTZ cameras and can set multiple preset points or retrieve and manage preset points that are set in the camera. This is helpful if you need to monitor multiple spots in one area from a particular camera.



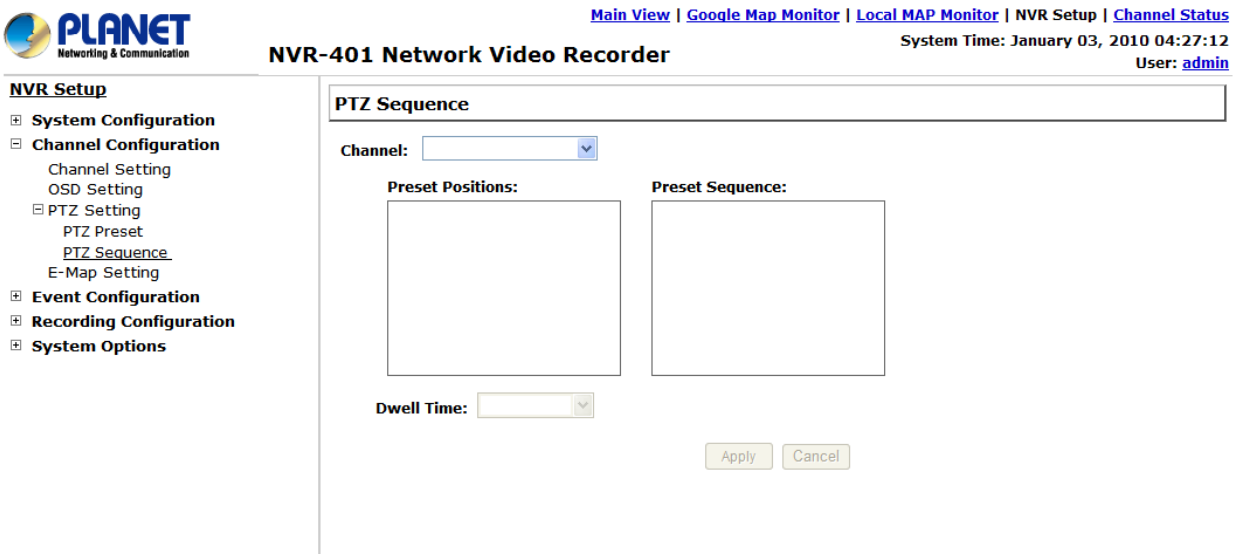
1. To set up PTZ preset points, select a camera from the “Camera” drop-down menu and click “Add”.

2. Select a position number for the preset point from the “Position Number” drop-down menu and fill in a name in the “Position Name” field for easier identification.

3. Use the PTZ control provided in the configuration page to set the preset point and set the position as the “HOME” position if you wish.
4. Click “Apply” to save the configuration.

6.2.4 PTZ Preset Sequence

Once you have multiple preset points defined for a camera, it is convenient for monitoring to set up the sequencing viewing among those preset point and let the recorder automatically switch between them for you.



To configure preset sequence for a camera," select a camera from the "Camera" drop-down menu.

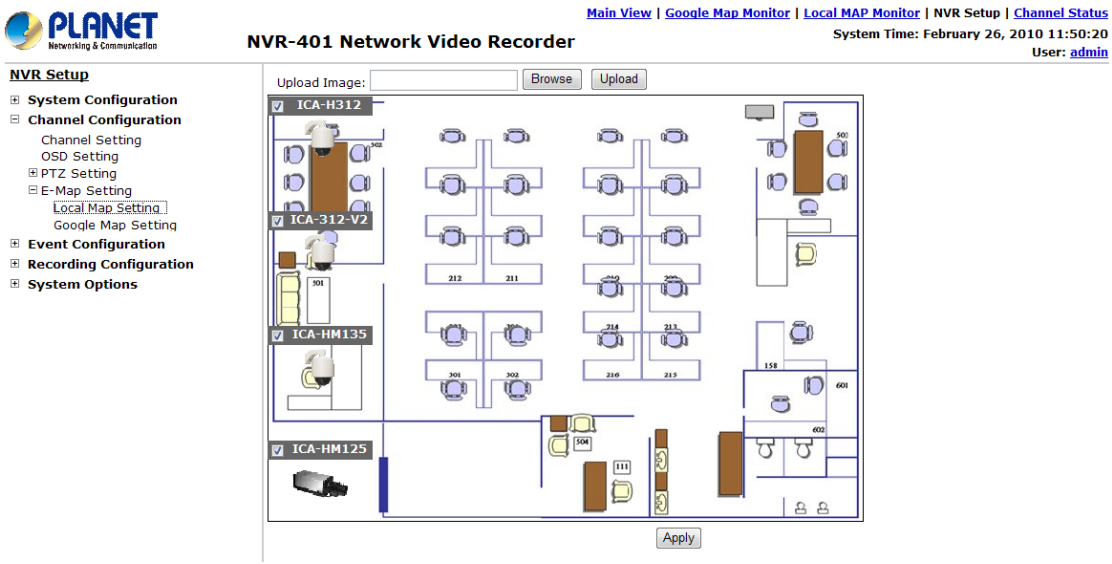
The available preset points should be listed in "Camera Presets" section.

Pick the ones you like for sequence viewing and press the "->" button to move them to the "Adjust Position" section, then use the up and down buttons to adjust their sequences.

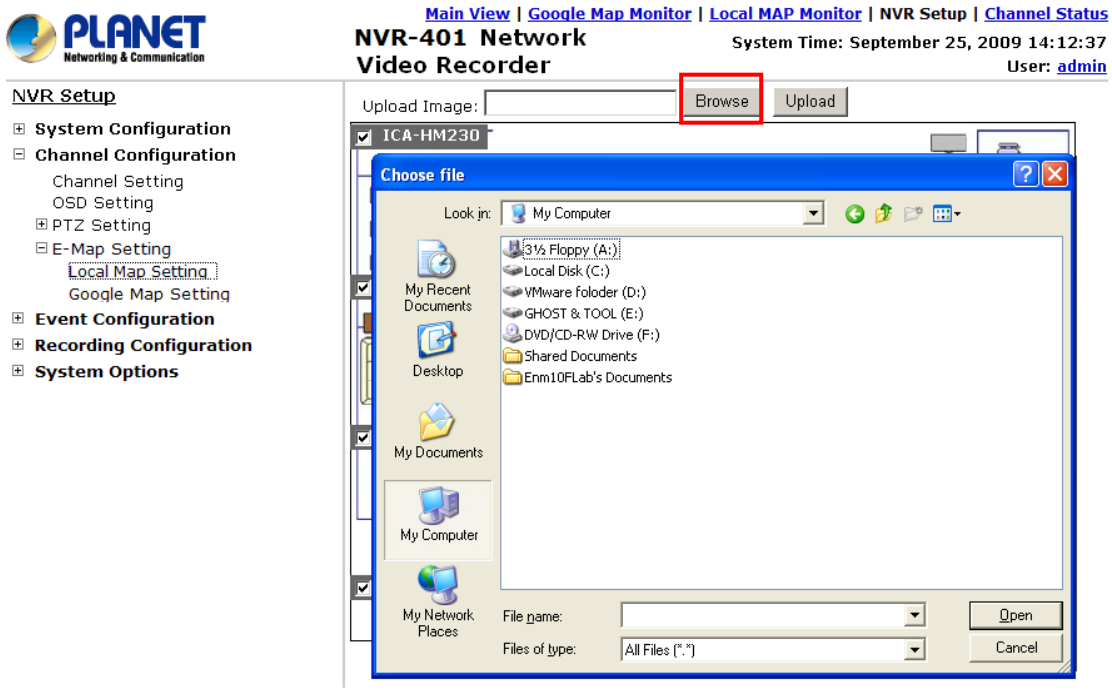
Finally, select a dwell time from the drop-down menu and click "Apply" to save the configuration.

6.2.5 Local Map Setting

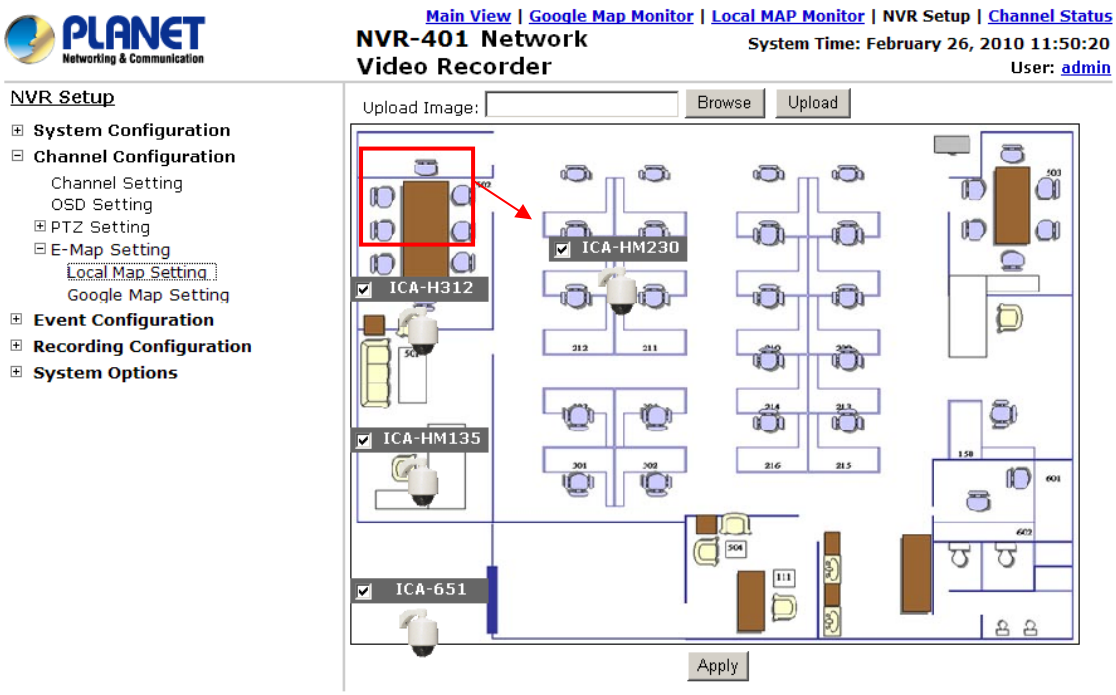
E-Map monitor is a function that alerts users whenever there is an event triggered (e.g. motion detected) from a camera with a geographical perspective. With this function, users can quickly identify which camera has detected an unusual event and where this event is happening. This function works by incorporating the event detection function as well as the recording function, which, as a result, helps users take all the necessary actions when an unusual event occurs.



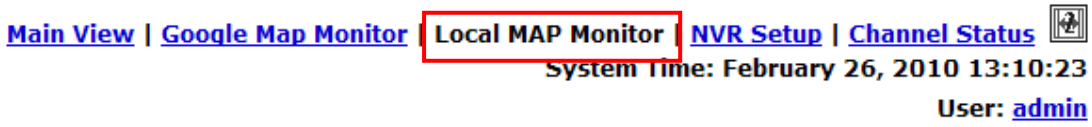
To replace the map, click “Browse” button to locate the new map image file from the local PC and then click “Upload”.



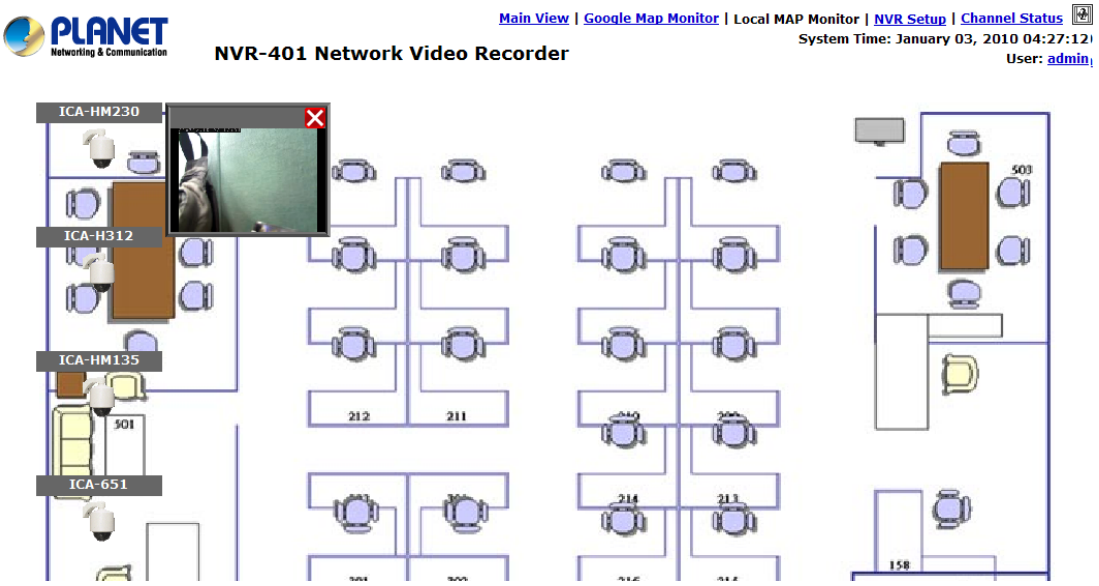
Then click and drag the camera icon to move the camera to define its location.



Access the “Local MAP Monitor” page from the upper-right hand corner menu.



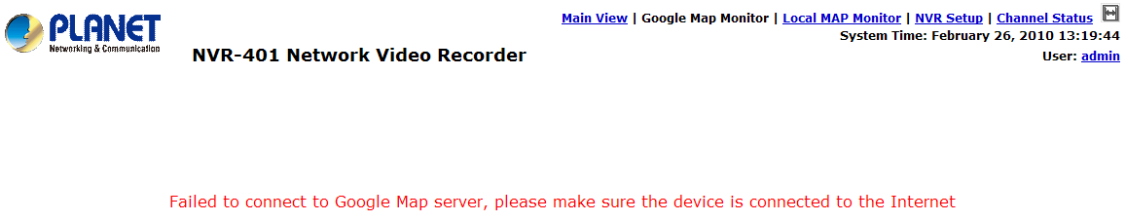
When the NVR receives an event triggered from any of the cameras, their videos will be displayed on the E-Map and you can double-click on the video to enlarge it.


Main View | Google Map Monitor | Local MAP Monitor | NVR Setup | Channel Status
NVR-401 Network Video Recorder
ICA-HM230
ICA-H312
ICA-HM135
ICA-651

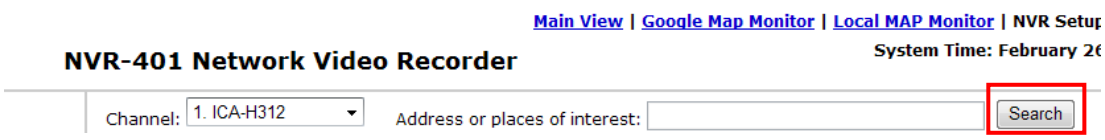
6.2.6 Google Map Setting

Google Map monitor is a E-Map function that works like Local MAP. The difference is this function allow user to get the map from Internet Google map service. So you don't have to provide a map to the NVR-401. In default, you will see the world map.

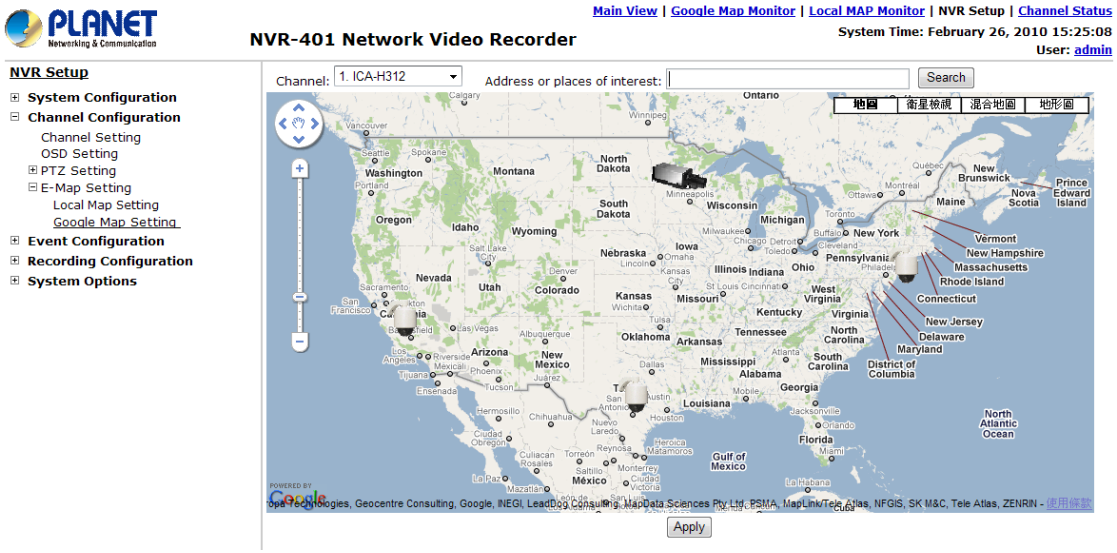
Before using and configure Google map function, you have to make sure the PC and NVR are connecting to Internet. Then you can configure this function and the NVR will properly work with this service. If Internet is not exist, you will see the error message to prompt you that it is fail to connect to Google Map server.


Main View | Google Map Monitor | Local MAP Monitor | NVR Setup | Channel Status
NVR-401 Network Video Recorder
System Time: February 26, 2010 13:19:44
User: admin
Failed to connect to Google Map server, please make sure the device is connected to the Internet

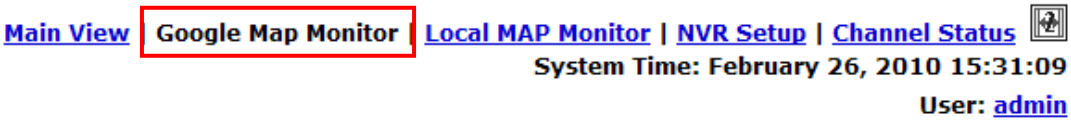
Please select which camera you want to locate to the map. Then search the map. Please enter the address in to the field and click "Search" button to locate the selected IP camera to this address. When the configuration finished, please press "Apply" to save the settings.


Main View | Google Map Monitor | Local MAP Monitor | NVR Setup
NVR-401 Network Video Recorder
System Time: February 26
Channel: 1. ICA-H312
Address or places of interest:
Search

Besides located by search address. You can also roll the central roller of your mouse to zoom-in/zoom-out the map to find out the address manually. Then click and drag the camera icon to move the camera to define its location. When the configuration finished, please press “Apply” to save the settings.



Access the “Google MAP Monitor” page from the upper-right hand corner menu.



When the NVR receives an event triggered from any of the cameras, their videos will be displayed on the E-Map and you can double-click on the video to enlarge it.

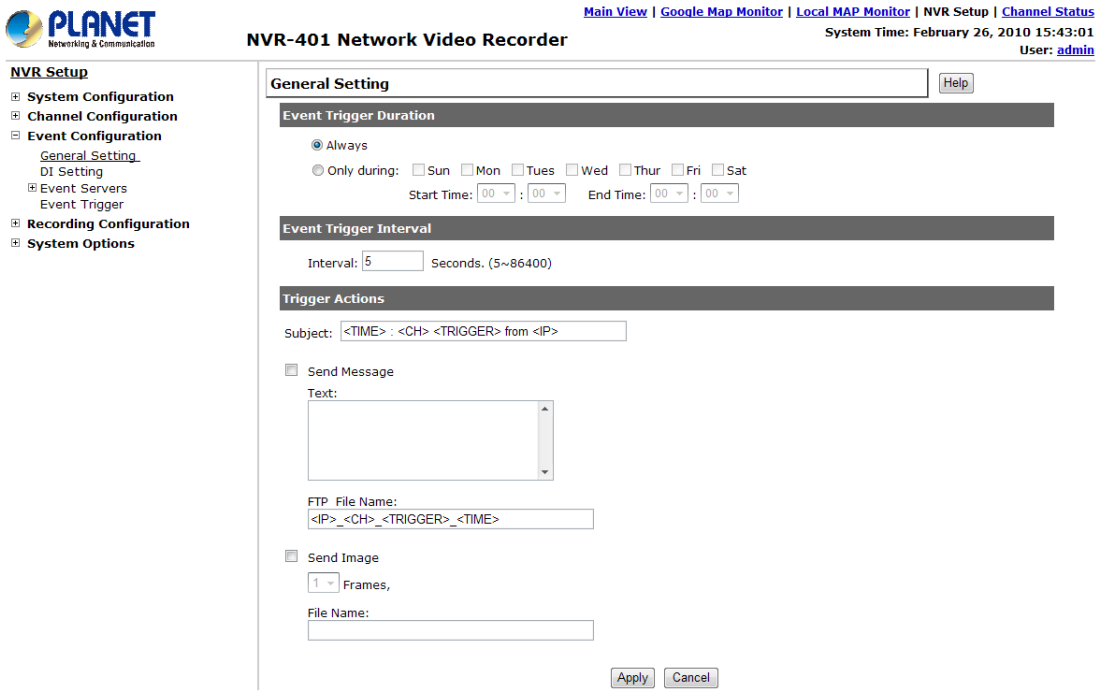
NVR-401 Network Video Recorder
Main View | Google Map Monitor | Local MAP Monitor | NVR Setup | Channel Status
System Time: February 26, 2010 15:31:09
User: admin
3: ICA-HM135

6.3 Event Configurations

The “Event Configurations” section allows users to define conditions that constitute an event, its corresponding trigger action and when it will be triggered. Such setting can reduce the management overhead and notify the administrator only when it’s necessary.

6.3.1 General Settings

The general settings section can help you quickly configure when an event is triggered, how often events are triggered and the corresponding actions when events are triggered.



Start the event configuration by defining the general settings:

Define when an event will be triggered.

• Choose “Always” or “Only during…” under “Event Trigger Duration”.

• For the “Only during…” option, choose the days by using the check-box and then define the time range in those days in the “Start Time” and “End Time” fields that you would like the event trigger function to be enabled.

How often an event is triggered

• Set a time interval under “Event Trigger Interval” to define how often events are triggered.

Trigger action

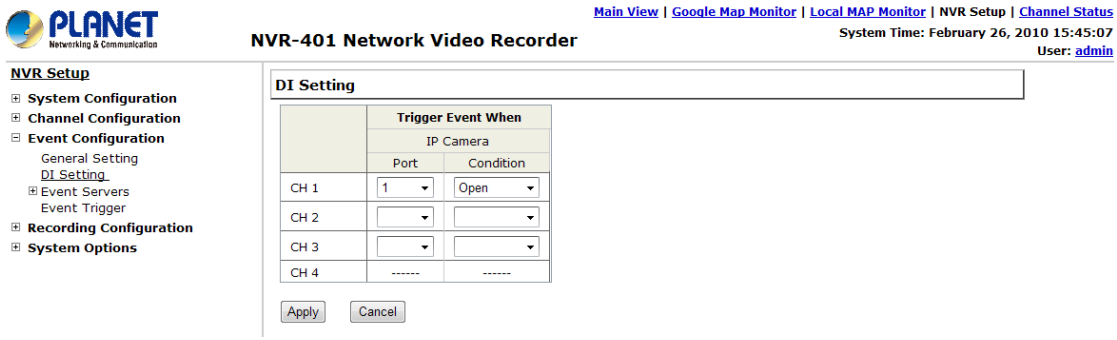
Now that you have the event trigger duration and interval defined, choose what action to be taken during an event trigger:

• You can choose to have the recorder send out the first few frames of the video recorder upon an event is triggered.

• You can also choose to have the recorder send out a warning message in e-mail or in txt file format and upload it to a destined FTP server.

6.3.2 DI Settings

This function allows users to manage camera's digital input port right from the recorder. You can setup the recorder to receive triggers from a particular camera's input port.



1. For cameras that come with physical digital input port, their port will be listed in the far left drop-down menu.
2. Pick the desired channel for DI mapping, and then select the camera's input port from the drop-down menu.
3. Select the trigger condition from the "Condition" drop-down menu.
4. Finally, define the trigger duration.

The recorder does not control camera's input port in a way to let you pair recorder itself with a camera's input port for event receiving.

The recorder only acts as a medium for pairing up input ports between cameras and the recorder.

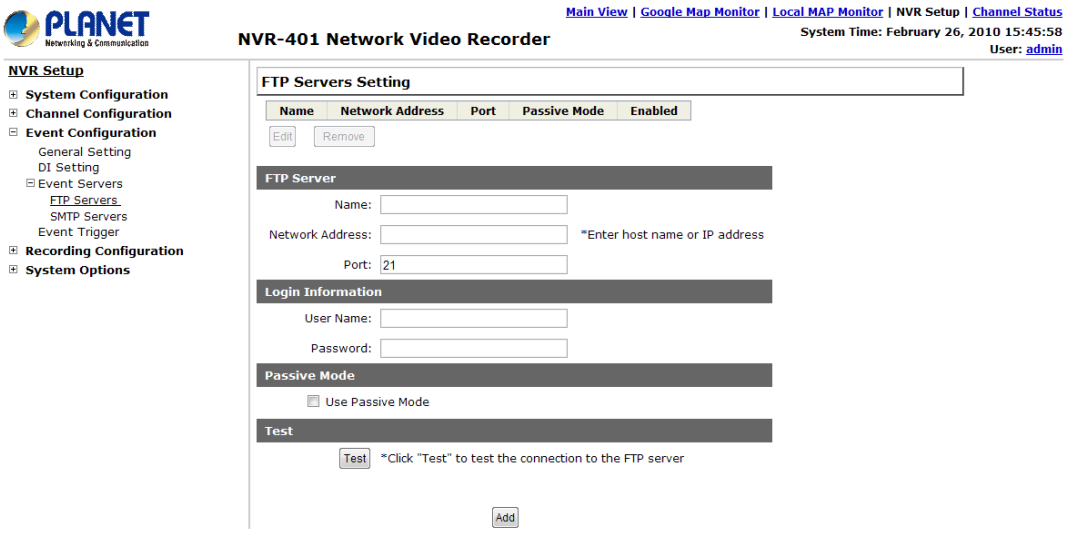
Only connected cameras will be displayed in the list.

Some cameras only allow one trigger source be configured at a time, e.g.: if the camera has the motion detection function turned on, its digital input will be disabled and vice versa. Under such circumstance, if you set to use camera's digital input port as the event trigger source, you will not be able to select motion detection as the trigger source for this camera under "Event Configurations" >> "Event Trigger" setup page.

6.3.3 Event Servers

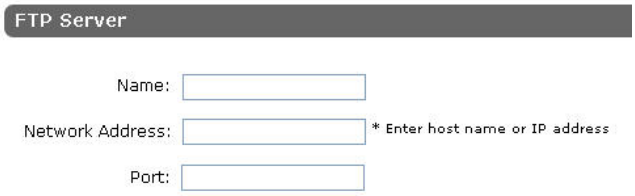
Event servers are to be used with event trigger actions. In case of unusual motion detected by the camera or a disk failure, the recorder can send notification with the acceptable format (image/txt) to a destined event server according to the configuration.

Configuring an FTP server



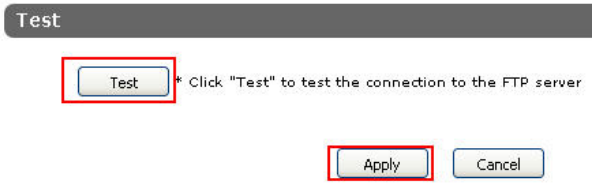
To add an FTP server,

1. Start by giving a name to the server that you are adding to the recorder.
2. Enter the hostname or the IP address of the FTP server.
3. Enter the communication port of the FTP server (usually port 21).

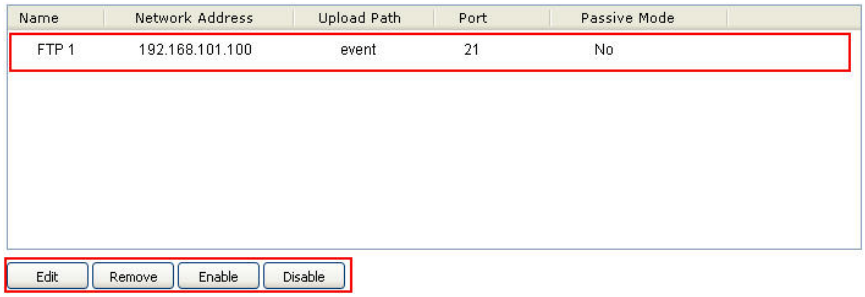


4. Enter the username and password of the FTP server if it's required.
5. Check "Use Passive Mode" if it's required or leave it unchecked to use active mode.

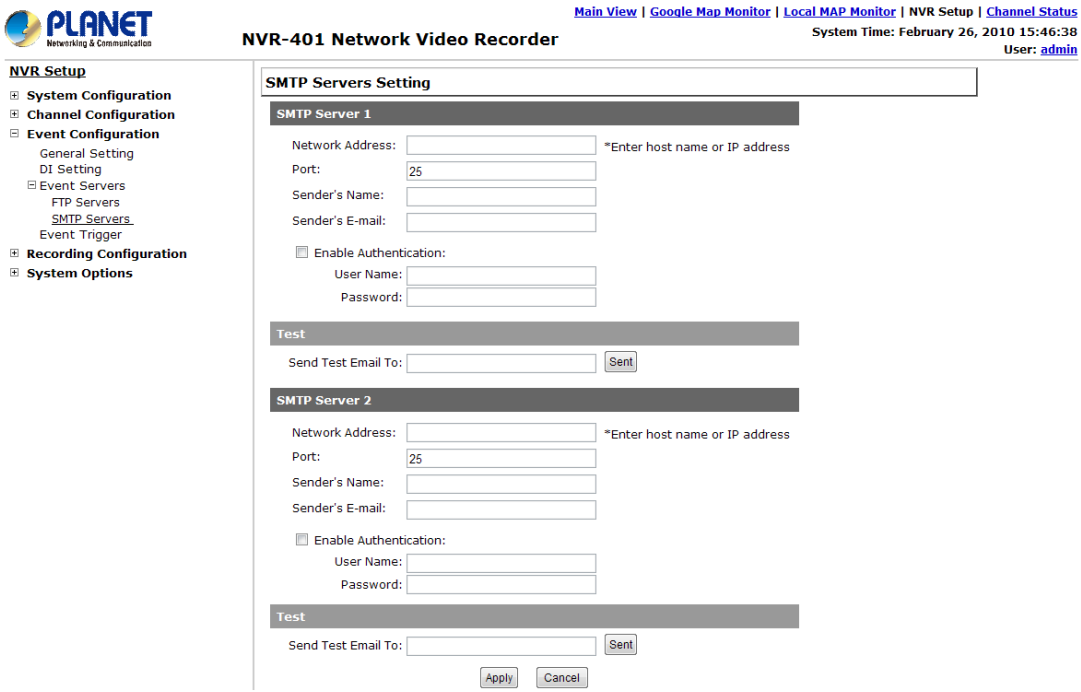
6. Click "Test" to verify if all information is entered correctly and the connection to the FTP server can be established successfully.
7. Click "Apply" for the settings to take effect.



If you wish to edit/remove/enable/disable an FTP server, click to highlight one from the profile list and choose the corresponding action button.



Configuring an SMTP server

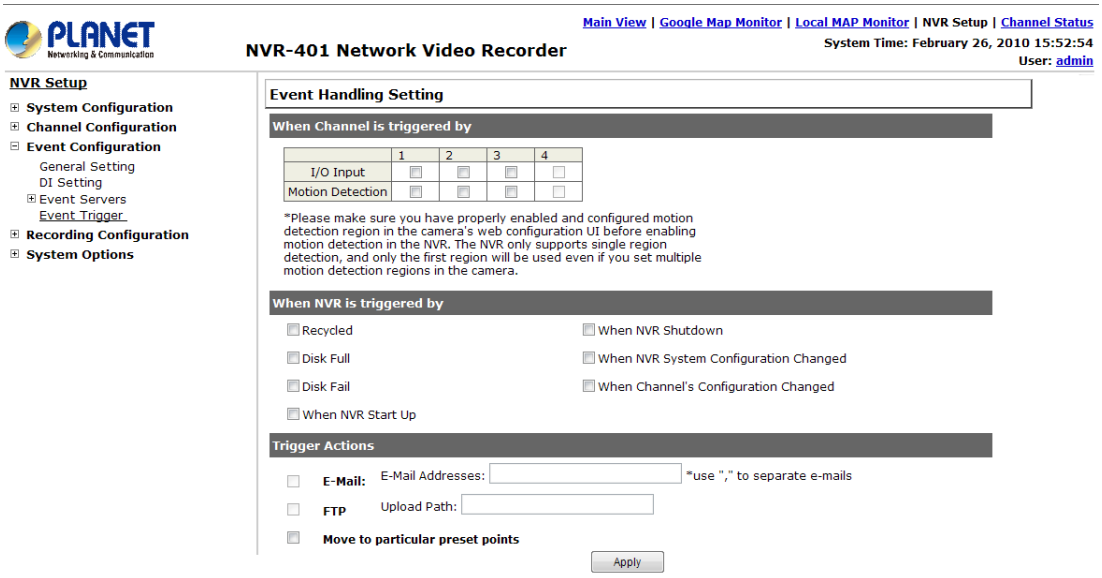


1. Enter the hostname or the IP address of the SMTP server.
2. Enter the port of the SMTP server.
3. Specify the sender's name in the "Sender's name" field.
4. Enter the sender's e-mail address.
5. Check "Enable Authentication" and enter the username and password of the SMTP server and it requires authentication.
6. Click "Apply" to save the configuration.

6.3.4 Event Triggers

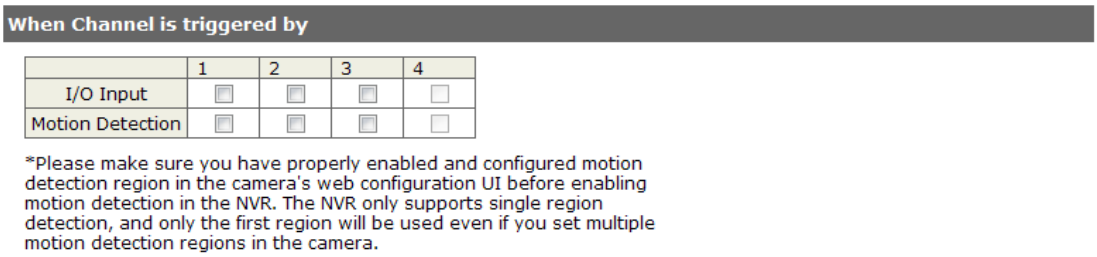
We have finished defining how an event will be triggered and which servers will be receiving notifications in the previous two sections, now we can finish up the event configuration by setting.

.which channels will have event trigger function enabled.
.What is considered to be an event.
.Where the warnings will be sent to and how they will be sent.

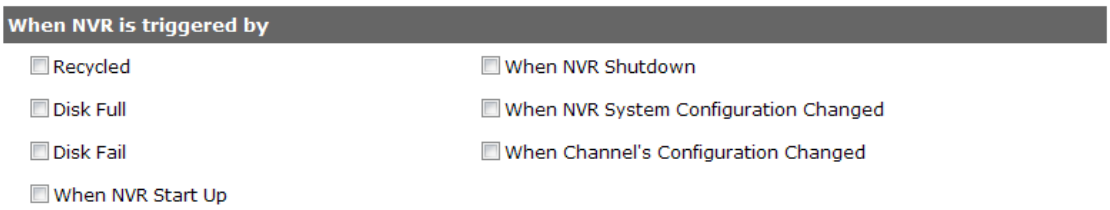

Main View | Google Map Monitor | Local MAP Monitor | NVR Setup | Channel Status
NVR-401 Network Video Recorder
System Time: February 26, 2010 15:52:54
User: admin
NVR Setup
System Configuration
Channel Configuration
Event Configuration
General Setting
DI Setting
Event Servers
Event Trigger
Recording Configuration
System Options
Event Handling Setting
When Channel is triggered by
1 2 3 4
I/O Input
Motion Detection
*Please make sure you have properly enabled and configured motion detection region in the camera's web configuration UI before enabling motion detection in the NVR. The NVR only supports single region detection, and only the first region will be used even if you set multiple motion detection regions in the camera.
When NVR is triggered by
Recycled
Disk Full
Disk Fail
When NVR Start Up
When NVR Shutdown
When NVR System Configuration Changed
When Channel's Configuration Changed
Trigger Actions
E-Mail: E-Mail Addresses: *use "," to separate e-mails
FTP Upload Path:
Move to particular preset points
Apply

Select Channels to Enable Event Trigger and which type of event should be triggered.

.Use the check box to enable event trigger on the desired channels.


When Channel is triggered by
1 2 3 4
I/O Input
Motion Detection
*Please make sure you have properly enabled and configured motion detection region in the camera's web configuration UI before enabling motion detection in the NVR. The NVR only supports single region detection, and only the first region will be used even if you set multiple motion detection regions in the camera.

.Define which system events should trigger the recorder to send out notifications



.Define how the notifications will be sent and where they will be sent to.

* Event trigger may not work for cameras that are placed outside of your local network or on the Internet until the UPnP Port Forwarding" is enabled in both the NVR and the router.

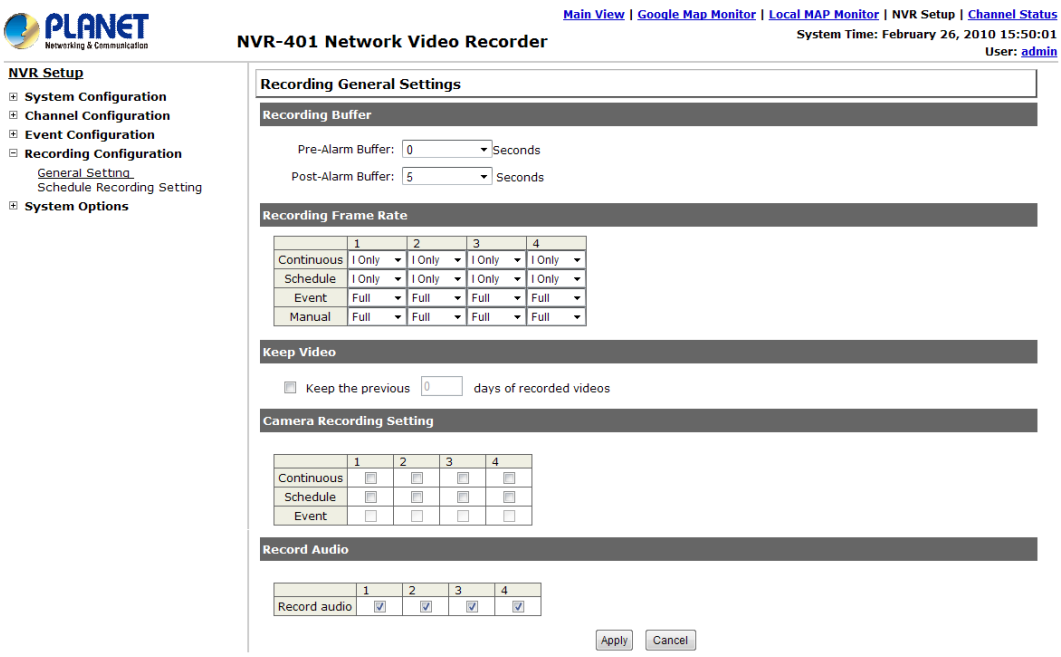
6.4 Recording Configurations

The “recording configurations” gives users the overall control of how and when a recording is performed and the quality of different types of recordings performed on each channels. It can help the recorder to operate with sufficient system resource by performing recording only when it’s necessary with adjustable recording frame rate.

6.4.1 General Settings

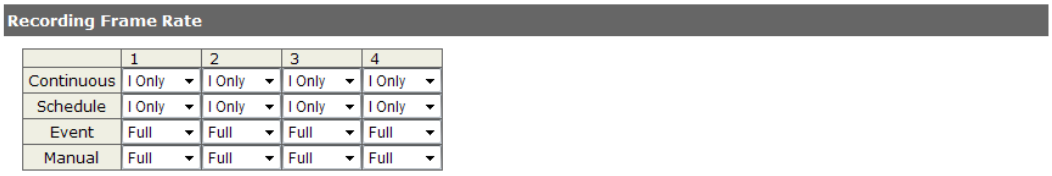
You can define the following in “General Settings”:

. Pre-Alarm/Post-Alarm recording length
. Recording frame rate
. Keep the record video with previous days
. Enable/disable different recording types on different cameras
. Enable/disable audio recording



The “recording configurations” gives users the overall control of how and when a recording is performed and the quality of different types of recordings performed on each channels. It can help the recorder to operate with sufficient system resource by performing recording only when it’s necessary with adjustable recording frame rate.

Recording frame rate allows you to set different frame rate for different types of recording instead of recording at one frame rate only. Use the drop-down menu and select one of the pre-defined frame rates for a particular recording type.



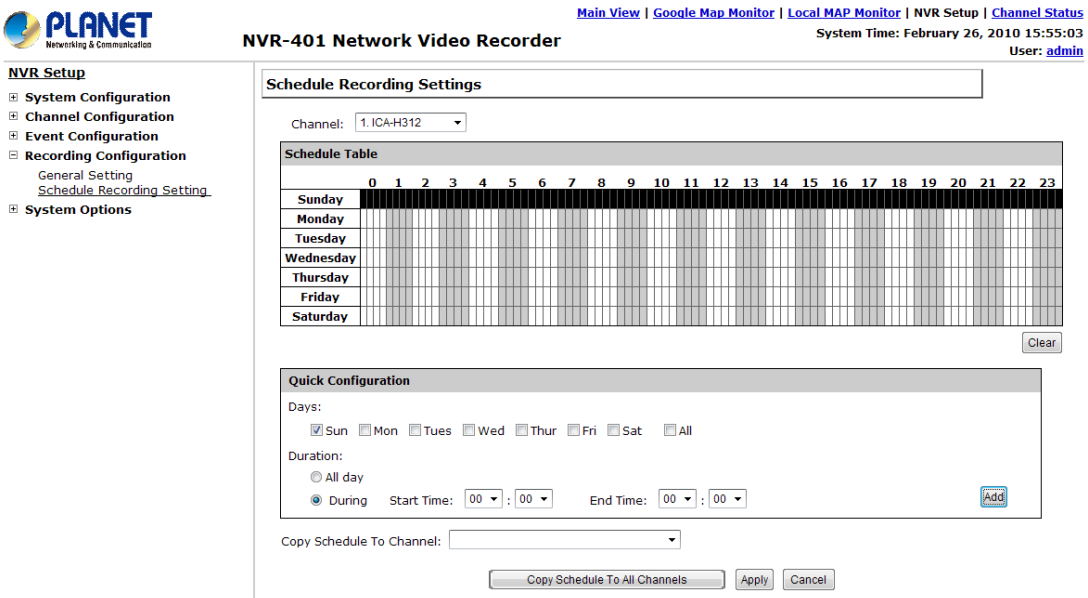
Keep video allows you to set the NVR keep the record video in previous days.

The section at the bottom allows you to turn on or off a particular recording type on any channels.

You can check the box the enable NVR audio recording function.

6.4.2 Schedule Recording

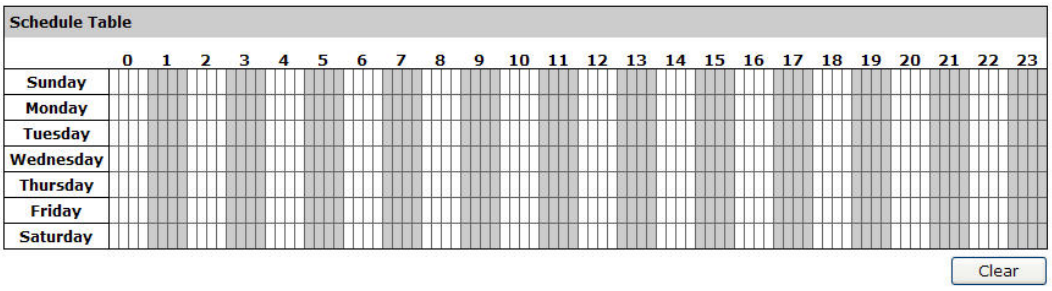
Here you can define the time range of the schedule recording for all channels.



To configure a schedule recording:

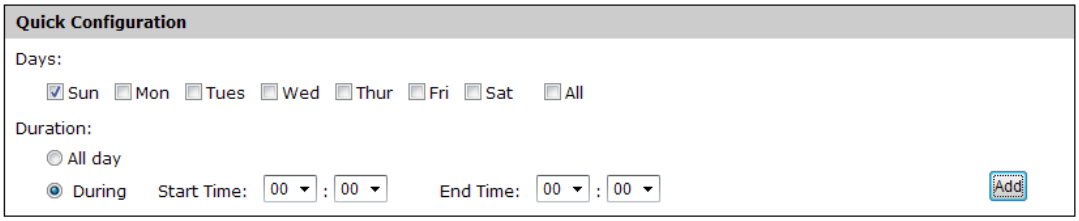
1. Use the “Camera” drop-down menu and select a camera first.

2. You can use the schedule table to set the time range. Click the cell boxes then move the curser horizontally lets you set what hours to perform recording during a day. Click and move vertically lets you set what days to perform recording at a specific time.

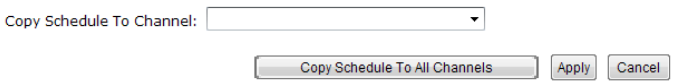


* Each cell box represents 15 minutes of time. Click one or more boxes to omit consecutive recording.

3. You can also use the “Quick Configuration” to define recording time range instead of clicking cell box one by one on the time table. Simply check what days you would like to perform recording and specify the recording duration by either choosing “All Day” or enter a start and end time for specific recording duration.



4. Select the “Copy to” option if you would like to set the same recording schedule to other camera or all of the cameras.

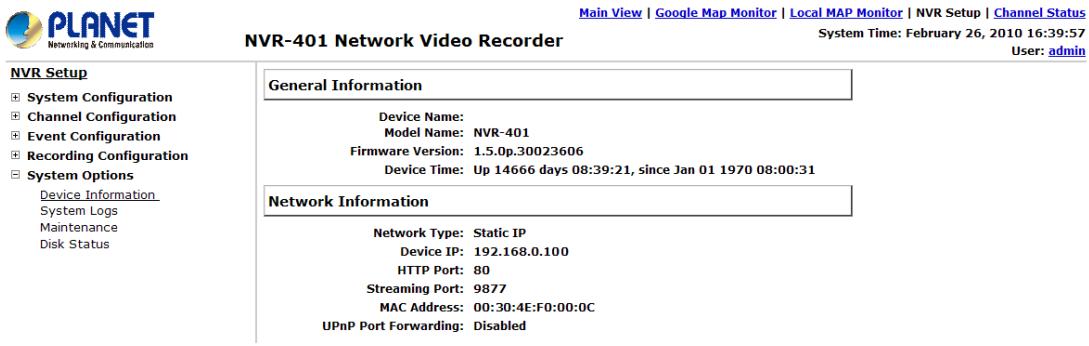


6.5 System Options

System Options gives users a glance of the overall system status and allows users to perform maintenance tasks such as upgrading firmware, restore/backup device settings or reboot device ….etc.

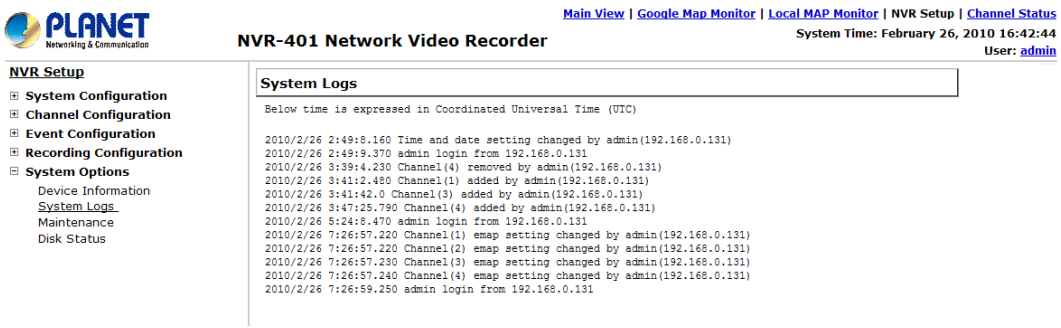
6.5.1 Device Information

The “Device Information” provides the general information of the device such as firmware version and system time. It also provides information of the current network settings and status.



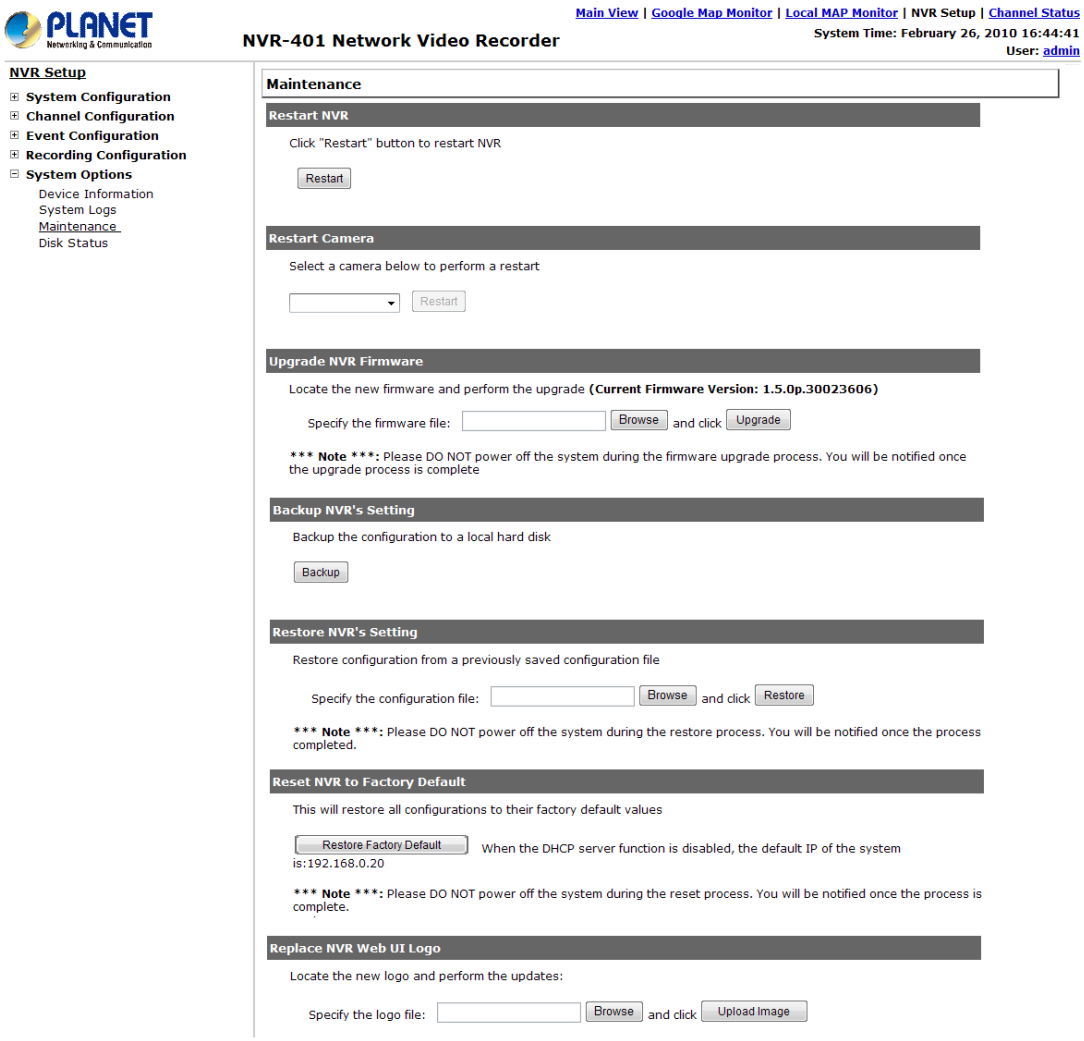
6.5.2 Logs and Reports

“Logs and Reports” keeps a record of what’s been happening to the device and provides basic information for troubleshooting.


Main View | Google Map Monitor | Local MAP Monitor | NVR Setup | Channel Status
NVR-401 Network Video Recorder
System Time: February 26, 2010 16:42:44
User: admin
NVR Setup
System Configuration
Channel Configuration
Event Configuration
Recording Configuration
System Options
Device Information
System Logs
Maintenance
Disk Status
System Logs
Below time is expressed in Coordinated Universal Time (UTC)
2010/2/26 2:49:8.160 Time and date setting changed by admin(192.168.0.131)
2010/2/26 2:49:9.370 admin login from 192.168.0.131
2010/2/26 3:39:4.230 Channel(4) removed by admin(192.168.0.131)
2010/2/26 3:41:2.480 Channel(1) added by admin(192.168.0.131)
2010/2/26 3:41:42.0 Channel(3) added by admin(192.168.0.131)
2010/2/26 3:47:25.790 Channel(4) added by admin(192.168.0.131)
2010/2/26 5:24:8.470 admin login from 192.168.0.131
2010/2/26 7:26:57.220 Channel(1) emap setting changed by admin(192.168.0.131)
2010/2/26 7:26:57.220 Channel(2) emap setting changed by admin(192.168.0.131)
2010/2/26 7:26:57.230 Channel(3) emap setting changed by admin(192.168.0.131)
2010/2/26 7:26:57.240 Channel(4) emap setting changed by admin(192.168.0.131)
2010/2/26 7:26:59.250 admin login from 192.168.0.131

6.5.3 Maintenance

“Maintenance” provides functions for users to:
. Reboot the NVR when necessary.
. Reboot cameras directly from the NVR.
. Perform Firmware Upgrade.
. Backup the NVR’s settings to a local hard drive.
. Restore the NVR’s settings from a previously saved configuration file.
. Reset the NVR’s settings to their factory default values.


Main View | Google Map Monitor | Local MAP Monitor | NVR Setup | Channel Status
NVR-401 Network Video Recorder
System Time: February 26, 2010 16:44:41
User: admin
NVR Setup
System Configuration
Channel Configuration
Event Configuration
Recording Configuration
System Options
Device Information
System Logs
Maintenance
Disk Status
Maintenance
Restart NVR
Click "Restart" button to restart NVR
Restart
Restart Camera
Select a camera below to perform a restart
Restart
Upgrade NVR Firmware
Locate the new firmware and perform the upgrade (Current Firmware Version: 1.5.0p.30023606)
Specify the firmware file:
Browse
and click
Upgrade
*** Note ***: Please DO NOT power off the system during the firmware upgrade process. You will be notified once the upgrade process is complete
Backup NVR's Setting
Backup the configuration to a local hard disk
Backup
Restore NVR's Setting
Restore configuration from a previously saved configuration file
Specify the configuration file:
Browse
and click
Restore
*** Note ***: Please DO NOT power off the system during the restore process. You will be notified once the process completed.
Reset NVR to Factory Default
This will restore all configurations to their factory default values
Restore Factory Default
When the DHCP server function is disabled, the default IP of the system is:192.168.0.20
*** Note ***: Please DO NOT power off the system during the reset process. You will be notified once the process is complete.
Replace NVR Web UI Logo
Locate the new logo and perform the updates:
Specify the logo file:
Browse
and click
Upload Image

Reboot the NVR

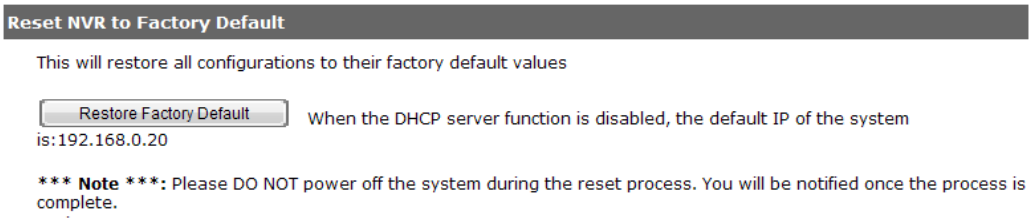
Reboot NVR-401 after you upload a new firmware. You would need to manually reboot the system for the new firmware to take effect. Such process would prevent a recording from getting interrupted because the system would not automatically reboot itself after the new firmware is loaded onto the recorder.

Simply click “Restart” to begin the reboot process and confirm the action.

The restart process should be displayed and you should be prompted back to the “Maintenance” page after it is complete.

Reset the NVR to Factory Default

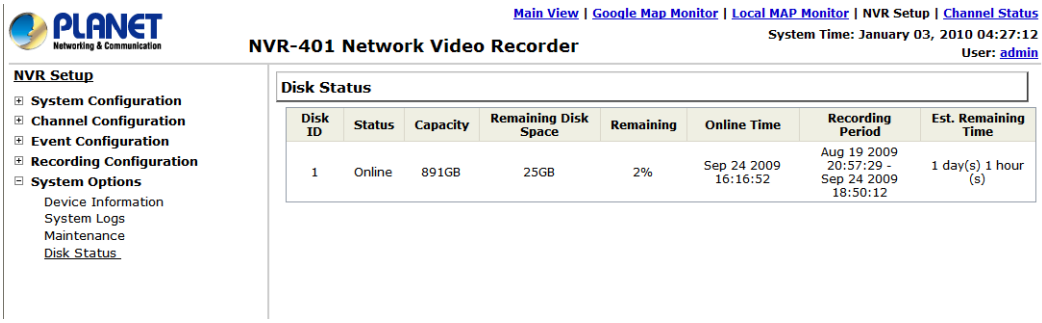
To reset the recorder back to its factory default, click “Default” button and begin the process.


Reset NVR to Factory Default
This will restore all configurations to their factory default values
Restore Factory Default
When the DHCP server function is disabled, the default IP of the system is:192.168.0.20
*** Note ***: Please DO NOT power off the system during the reset process. You will be notified once the process is complete.

The process should be displayed and you should be prompted back to the “Maintenance” page after it is complete.

6.5.4 Disk Status

“Disk Status” gives you more detailed information of the hard drive that is currently installed in the NVR.


PLANET Networking & Communication
Main View | Google Map Monitor | Local MAP Monitor | NVR Setup | Channel Status
NVR-401 Network Video Recorder
System Time: January 03, 2010 04:27:12
User: admin
NVR Setup
System Configuration
Channel Configuration
Event Configuration
Recording Configuration
System Options
Device Information
System Logs
Maintenance
Disk Status
Disk Status
Disk ID | Status | Capacity | Remaining Disk Space | Remaining | Online Time | Recording Period | Est. Remaining Time
1 | Online | 891GB | 25GB | 2% | Sep 24 2009 16:16:52 | Aug 19 2009 20:57:29 - Sep 24 2009 18:50:12 | 1 day(s) 1 hour (s)

EC Declaration of Conformity

For the following equipment:

*Type of Product : 4-Ch Network Video Recorder
*Model Number : NVR-401

* Produced by:
Manufacturer's Name : **Planet Technology Corp.**
Manufacturer's Address : 11F, No. 96, Min Chuan Road, Hsin Tien,
Taipei, Taiwan, R.O.C.

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (89/336/EEC, 92/31/EEC, 93/68/EEC).
For the evaluation regarding the Electromagnetic Compatibility, the following standards were applied:

EN 55022	(2006, Class B)
EN 61000-3-2	(2000)
EN 61000-3-3	(1995+A1: 2001)
EN 55024	(1998+A1: 2001+A2: 2003)
IEC 61000-4-2	(1995 + A1: 1998 + A2: 2000)
IEC 61000-4-3	(2002 + A1: 2002)
IEC 61000-4-4	(2004)
IEC 61000-4-5	(1995 + A1: 2000)
IEC 61000-4-6	(1996 + A1: 2000)
IEC 61000-4-8	(1993 + A1: 2000)
IEC 61000-4-11	(2004)

Responsible for marking this declaration if the:

☒ **Manufacturer** ☐ **Authorized representative established within the EU**

Authorized representative established within the EU (if applicable):

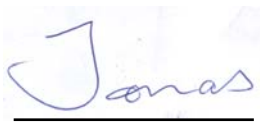
Company Name: **Planet Technology Corp.**

Company Address: **11F, No.96, Min Chuan Road, Hsin Tien, Taipei, Taiwan, R.O.C**

Person responsible for making this declaration

Name, Surname **Jonas Yang**

Position / Title : **Product Manager**

Taiwan	**3rd Mar., 2010**	
Place	*Date*	*Legal Signature*